



May 10, 2005

**South Florida
Ecosystem
Restoration**



**consultation with the
South Florida Ecosystem Restoration Task Force**

Agenda

May 10, 2005

Scoping

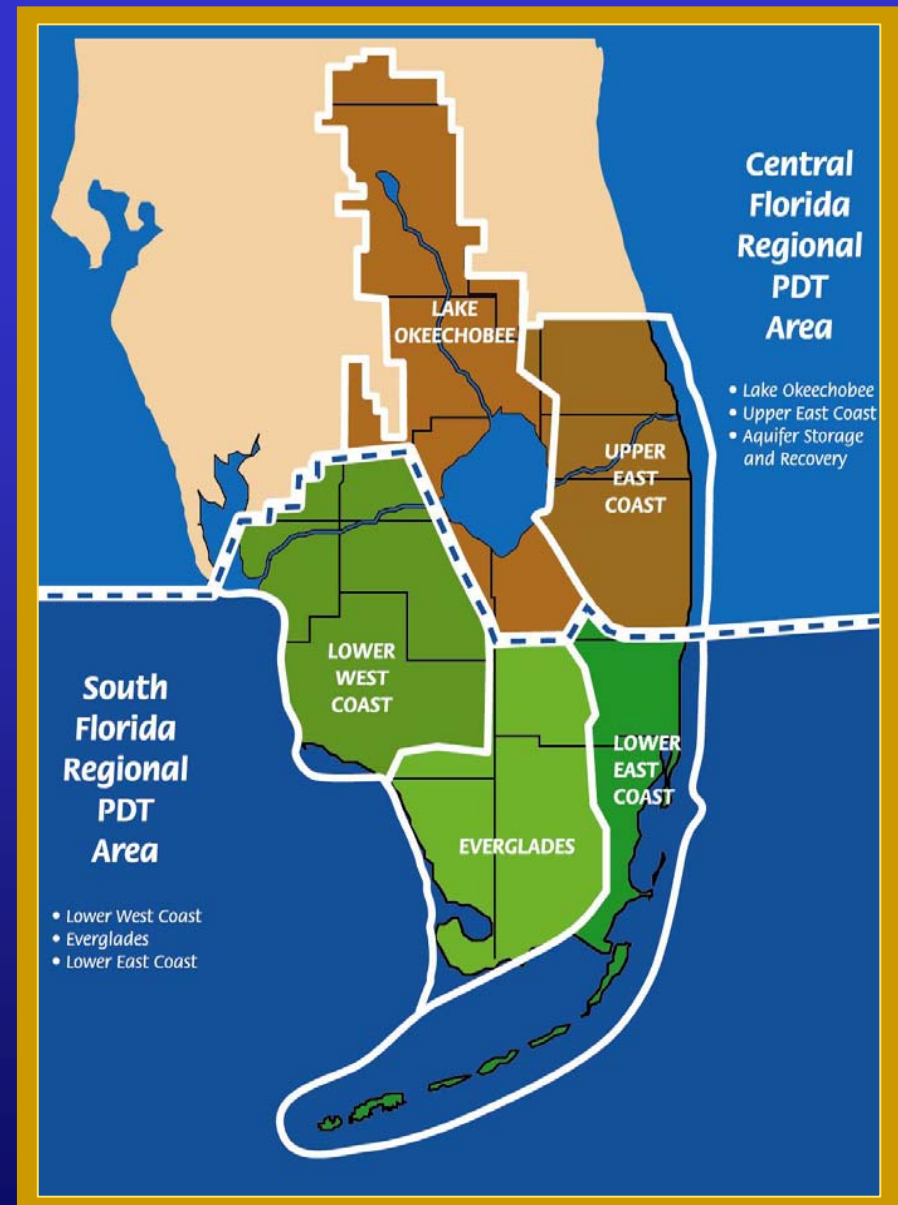
- North Palm Beach
- C-43
- C-111 Spreader Canal
- Acme Basin B
- Lake Okeechobee Watershed

Alternative Formulation

- EAA
- Water Preserve Areas
- Biscayne Bay Coastal Wetlands
- Winsberg Farms

Draft Report

- Site 1 Impoundment



SCOPING

Scoping Consultation

Project is in initial stage of Development

Includes:

Description of Restudy plan

Goals and Objectives of Restudy plan

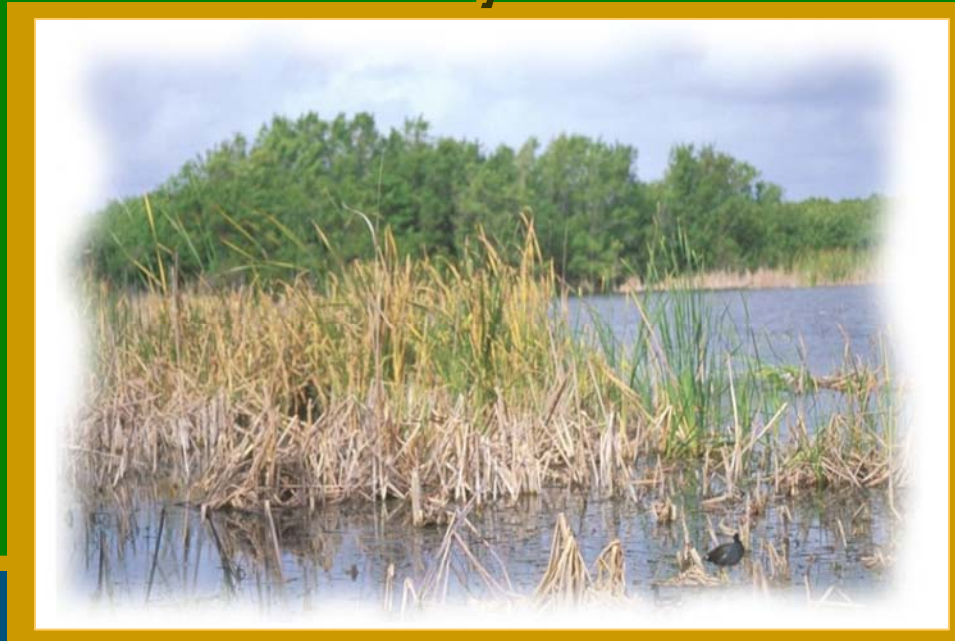
Existing and future conditions

Plan Formulation considerations/concerns

Seeking:

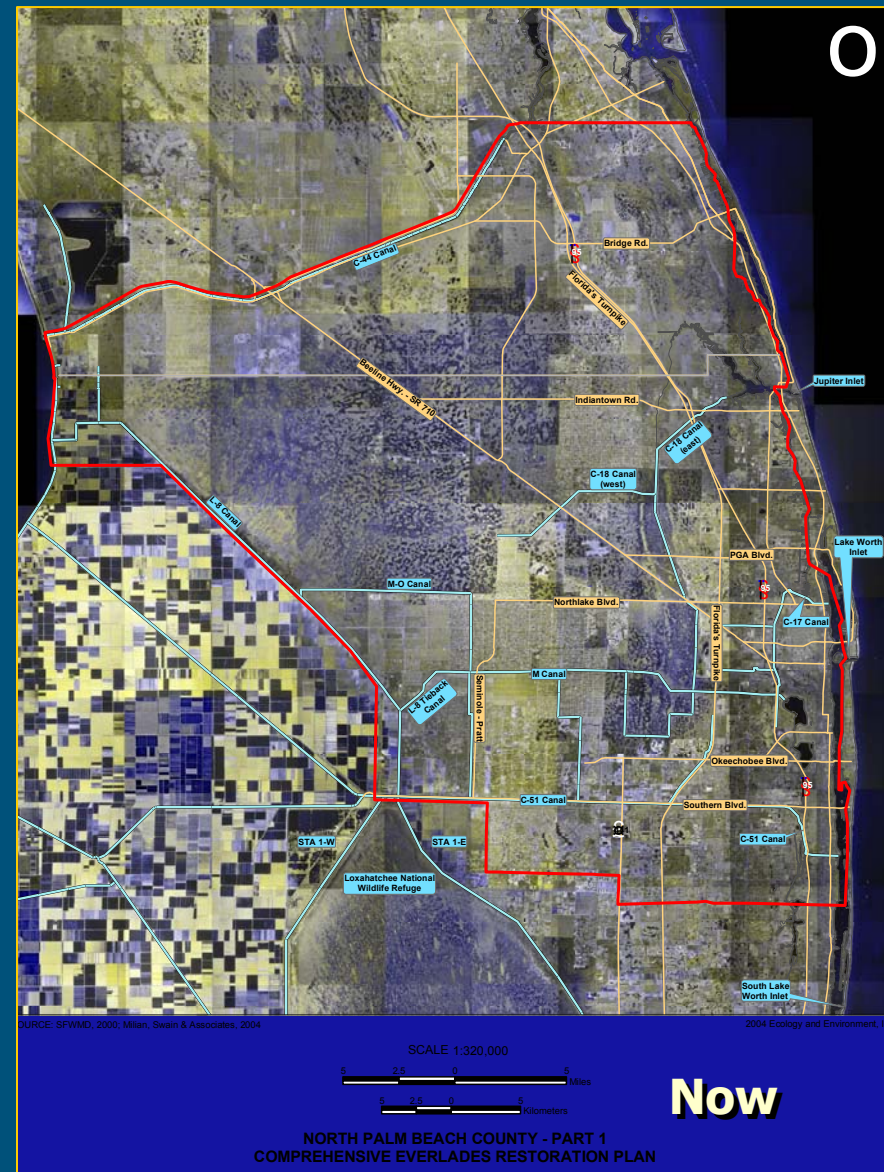
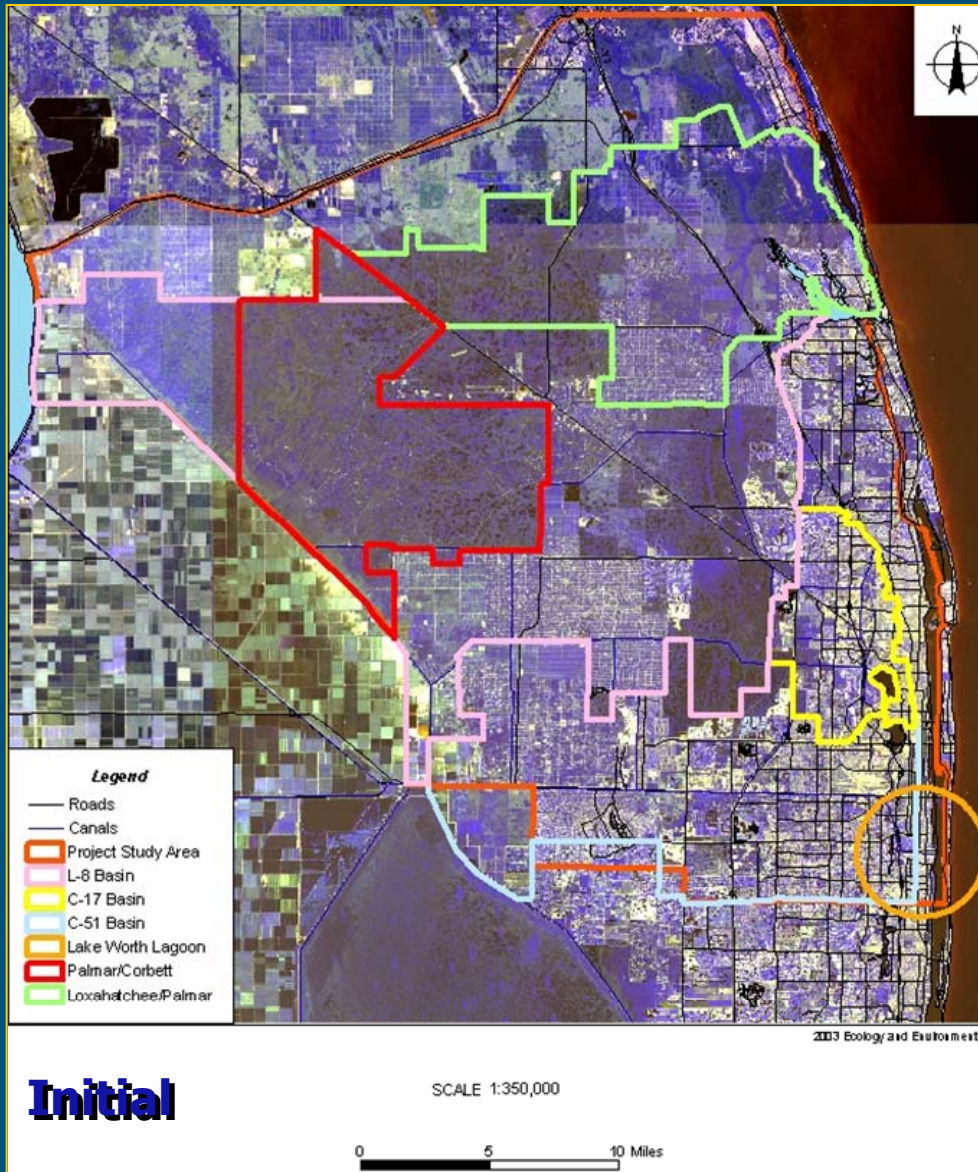
Input on special concerns and considerations for project area and system needs as related to restoration goals and objectives

North Palm Beach County PIR/EIS



May 10, 2005

North Palm Beach Project



Project Objectives

- **Capture and store/treat excess water currently discharged to Lake Worth Lagoon**
- **Use this water to provide environmental enhancement of:**
 - **Loxahatchee River**
 - **Loxahatchee Slough**
 - **Grassy Waters Preserve**
- **Improve hydrologic connections between protected natural areas including those tributary to the Loxahatchee River**

Project Components

- **L-8 Basin Modifications** - This element involves modifications to the L-8 Basin including a series of pumps, water control structures, and canal capacity improvements in the M canal
- **C-51 and L-8 Reservoir** - This element includes a reservoir with a total storage capacity of 48,000 acre-feet
- **Lake Worth Lagoon Restoration** - This element includes sediment removal and trapping in the C-51 Canal and sediment removal or trapping within a 2.5 mile area downstream of the C-51 Canal in the Lake Worth Lagoon

Project Components

- **C-17 Pumping and Treatment** - This element includes pumping facilities and a stormwater treatment area with a total capacity of 2,200 acre-feet located in northeastern Palm Beach County
- **C-51 Pumping and Treatment** - This element includes pumping facilities and a stormwater treatment area with a storage capacity of 2,400 acre-feet located in Palm Beach County
- **Pal-Mar and J.W. Corbett Wildlife Management Area Hydro-pattern Restoration** - This element will consider improvements such as new or modified water control structures, canal modifications, and the acquisition of 3,000 acres

Estimated Project Costs*

PMP/PIR	\$ 14,643,000
Detailed Design	\$ 7,696,000
Plans and Specs	\$ 2,482,000
Real Estate	\$ 63,783,000
Construction	\$ 336,475,000
Project Total	\$ 425,079,000

*** From April 1999 Feasibility Report**

Project Status

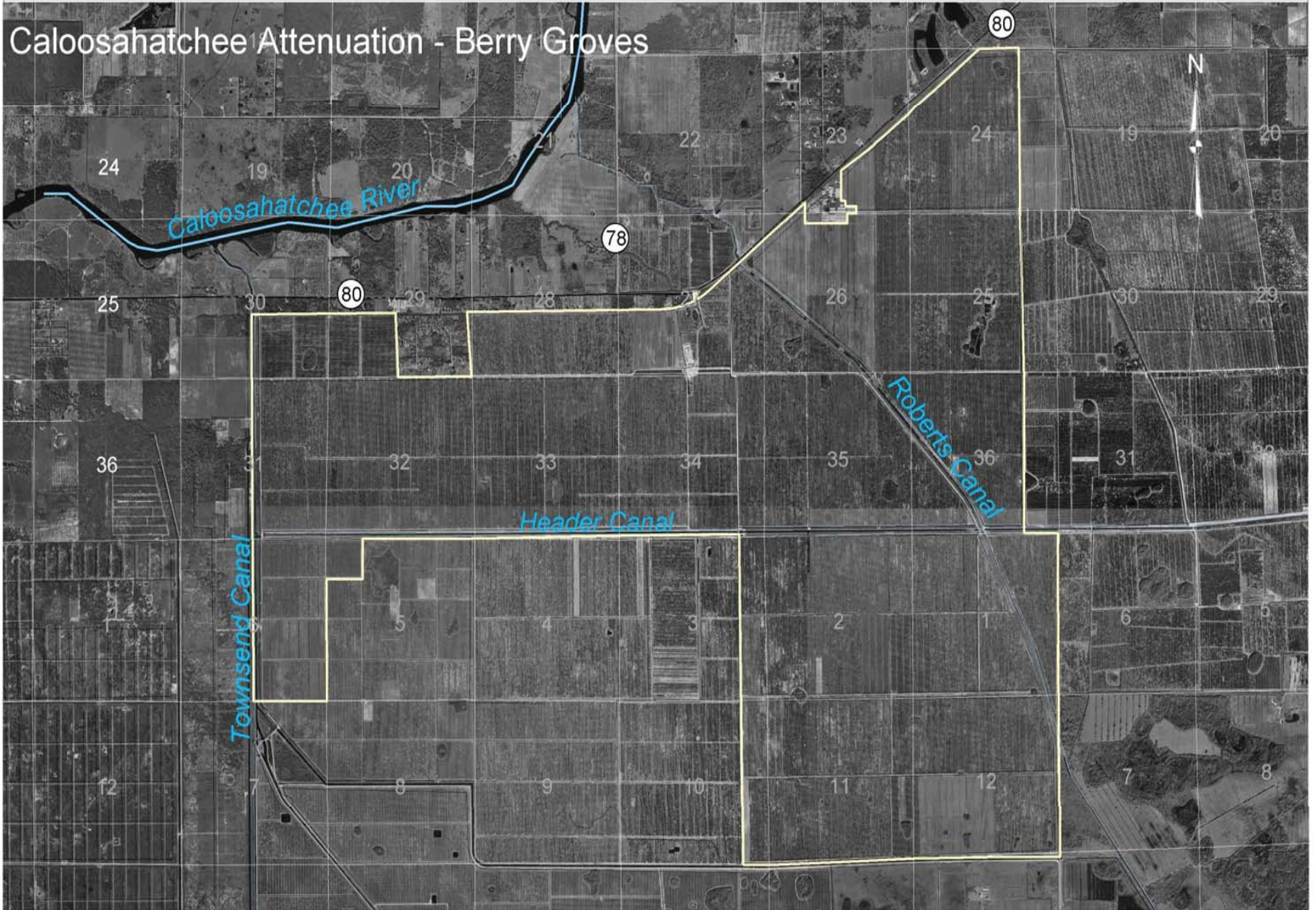
- **Initiating development of alternative plans**
- **Evaluate Alternative Plans**
- **Alternative Formulation Briefing Scheduled for March 2006**

C-43 Storage Reservoir – Part 1



May 10, 2005

C-43 Reservoir



Objectives

- **Improve the quantity and timing of freshwater flows to the Caloosahatchee Estuary by capturing runoff from the Caloosahatchee Basin and Lake Okeechobee for release when needed and/or necessary**
- **Improve salinity balance in the Caloosahatchee Estuary for estuarine organisms.**
- **Improve water quality in the Caloosahatchee Estuary by reducing nutrient inflows from the freshwater Caloosahatchee Basin**
- **Improve the spatial extent and functional quality of habitat for estuarine biota**

Objectives (continued)

- **Increase plant and animal diversity and abundance, particularly increasing the spatial extent of SAV**
- **Conserve and protect water resources to ensure sustainability of economic and natural resources**
- **Provide adequate availability of ground and surface water for environmental resources while protecting existing legal sources of water for agricultural and urban uses**
- **Provide recreational, tourism, and environmental education opportunities**

C-43 Basin Storage Reservoir - Part 1 in Restudy

- **CERP identified a conceptual C-43 Basin Storage Reservoir project that would provide 160,00 acre feet of above ground storage for environmental restoration of the Caloosahatchee River and estuary**
- **Updated information now shows that 160,000 acre feet of storage proposed in the Restudy may not be adequate due to greater agricultural demands, increased estuarine demands, and less basin runoff than initially predicted**
- **This potential shortfall will be examined during the development of the Project Implementation Report**

C-43 Basin Storage Reservoir Part 1

- Project Purpose: To improve the the timing, quantity, and quality of freshwater flows to the Caloosahatchee River estuary
- Yellow Book Cost: \$201,200,000 (approximately \$132,600,000 attributed to real estate)

C-43 Basin Storage Reservoir – Part 1 Project Status

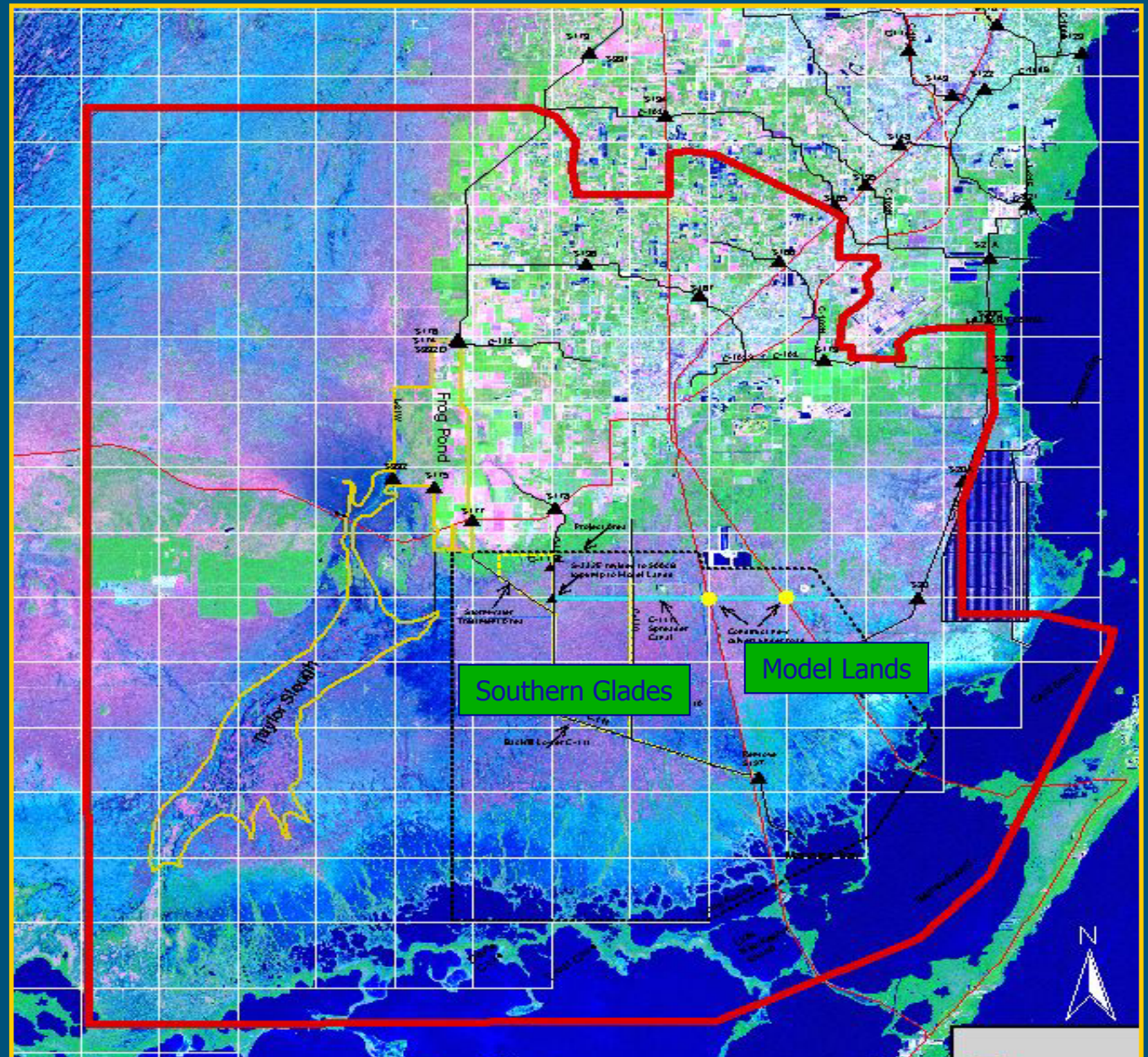
- **Alternative Formulation Briefing – July 2005**
- **Project Implementation Report (PIR) completed - May 2007**
- **SFWMD Construction Start - June 2007**

C-111 Spreader Canal



May 10, 2005

C-111 Project Area

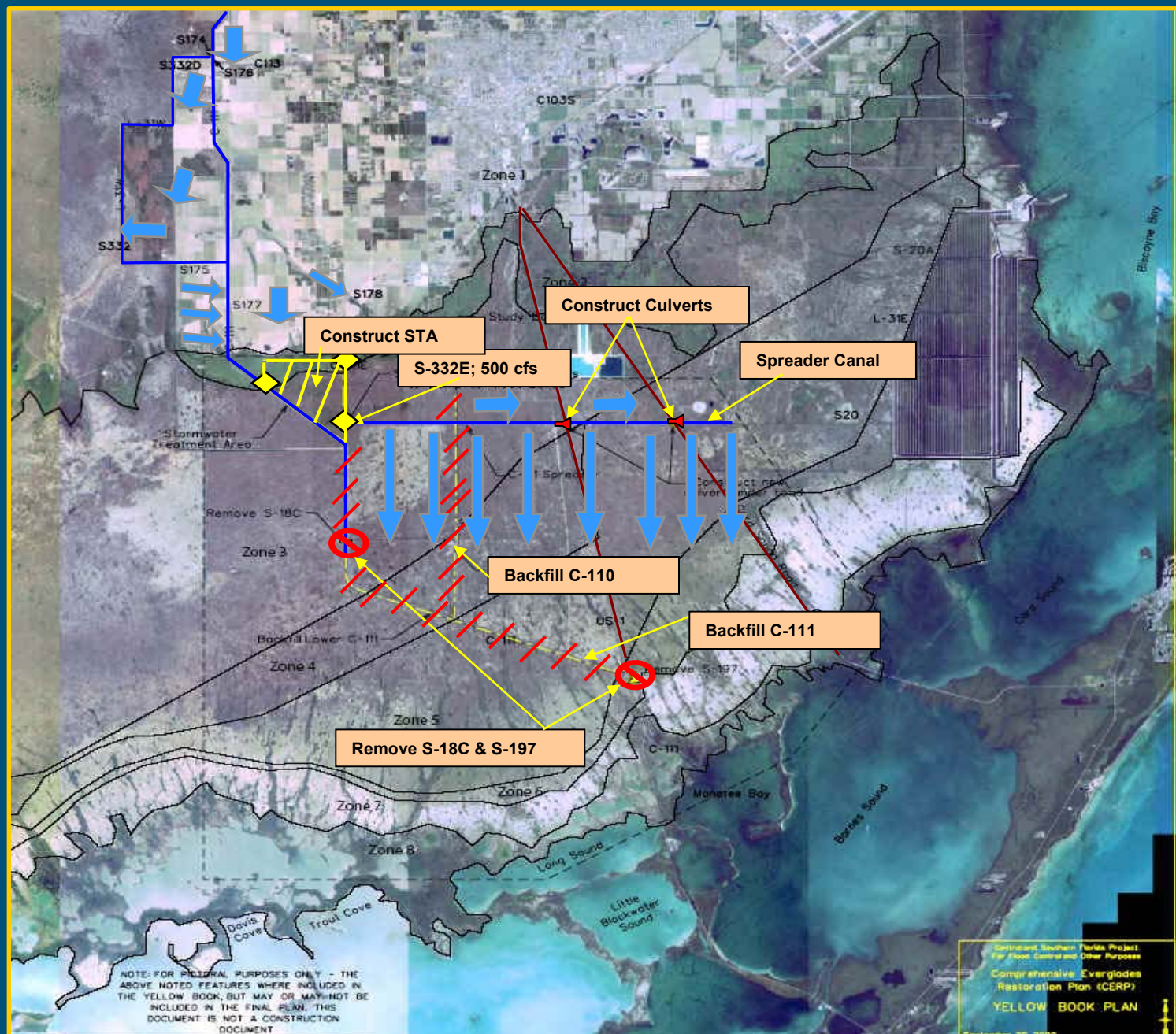


C-111 Spreader Canal Project Area

C-111 Spreader Canal - Objectives

- **Ecological restoration of the Southern Glades and Model Lands including downstream estuaries**
- **Improve timing, distribution, quantity and quality of water deliveries**
- **Re-establish sheet flow and hydropatterns and reduce point source discharges to Manatee Bay and Barnes Sound**
- **Identify recreational opportunities consistent with environmental restoration goals**

C-111 Spreader Canal Plan From Restudy



C-111 Spreader Canal Project Area

Project Cost*

Project Element	Cost Estimate
Real Estate	\$45,766
Construction	\$48,268
Total	\$94,034

***Note: This estimate is the “base line” estimate based on Restudy, and does not account for inflation since 1999 or future price escalation**

**** Based on 12415 acres required by YB. Note, approximately \$25 million would need to be added to acquire Southern Glades lands**

Variations in Alternatives Being Considered

- Northern vs Southern alignment of the spreader canal to maximize overland flow
- Variations to remove hydraulic divides, ie. make them hydraulically invisible (road beds)
- Different levels of degrading canals
- STAs (unlined whose purpose is to reduce nitrogen and phosphorus loading)
- Reservoirs (lined and provide storage on an as needed basis)
- Pump size and location to maximize available water to STAs

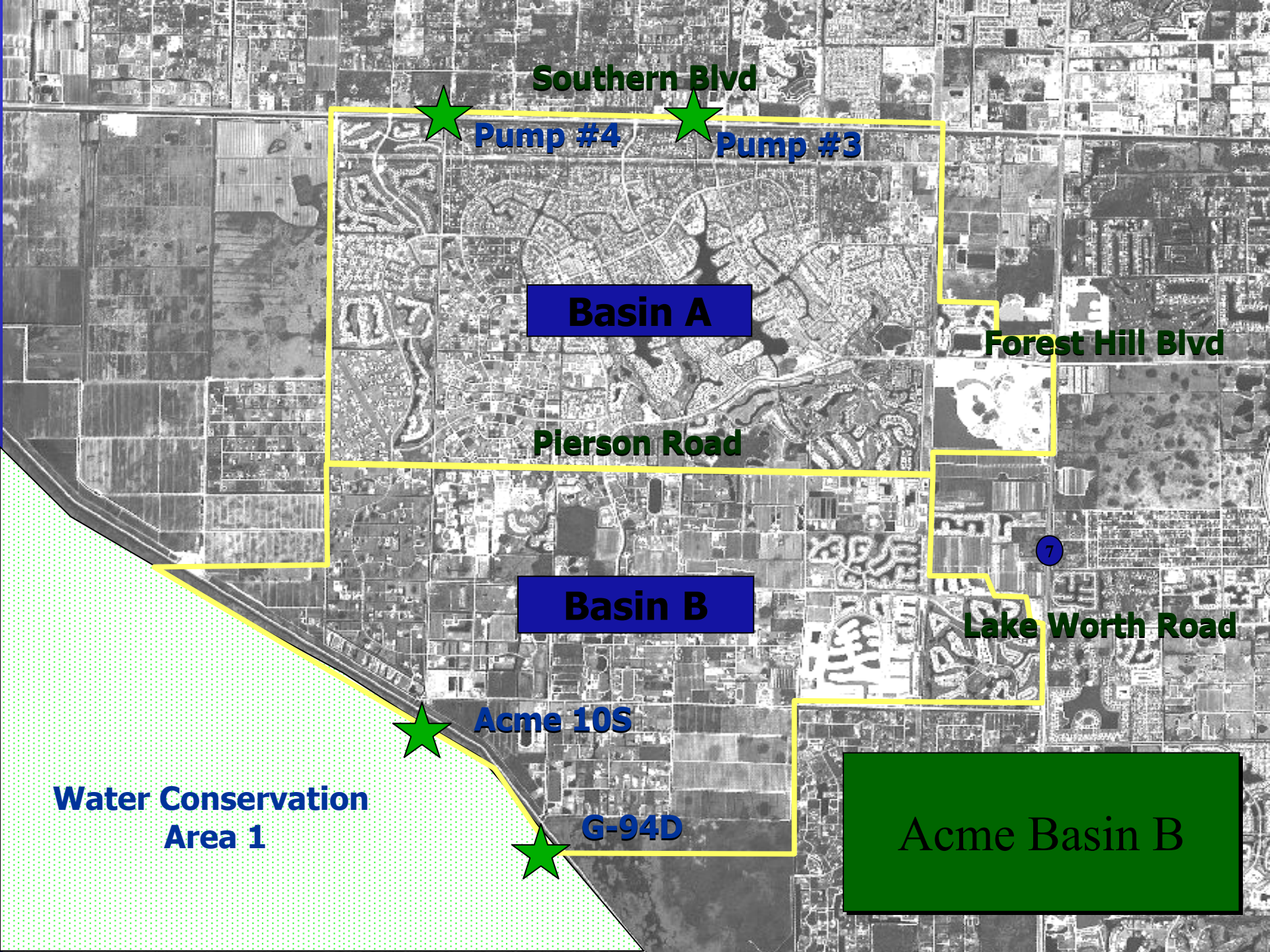
Project Status

- **Initiating development of alternative plans**
- **Evaluate Alternative Plans**
- **Alternative Formulation Briefing Scheduled for November 2005**

Acme Basin B Discharge



May 10, 2005



Southern Blvd



Pump #4



Pump #3

Basin A

Pierson Road

Forest Hill Blvd

Basin B

7

Lake Worth Road



Acme 10S

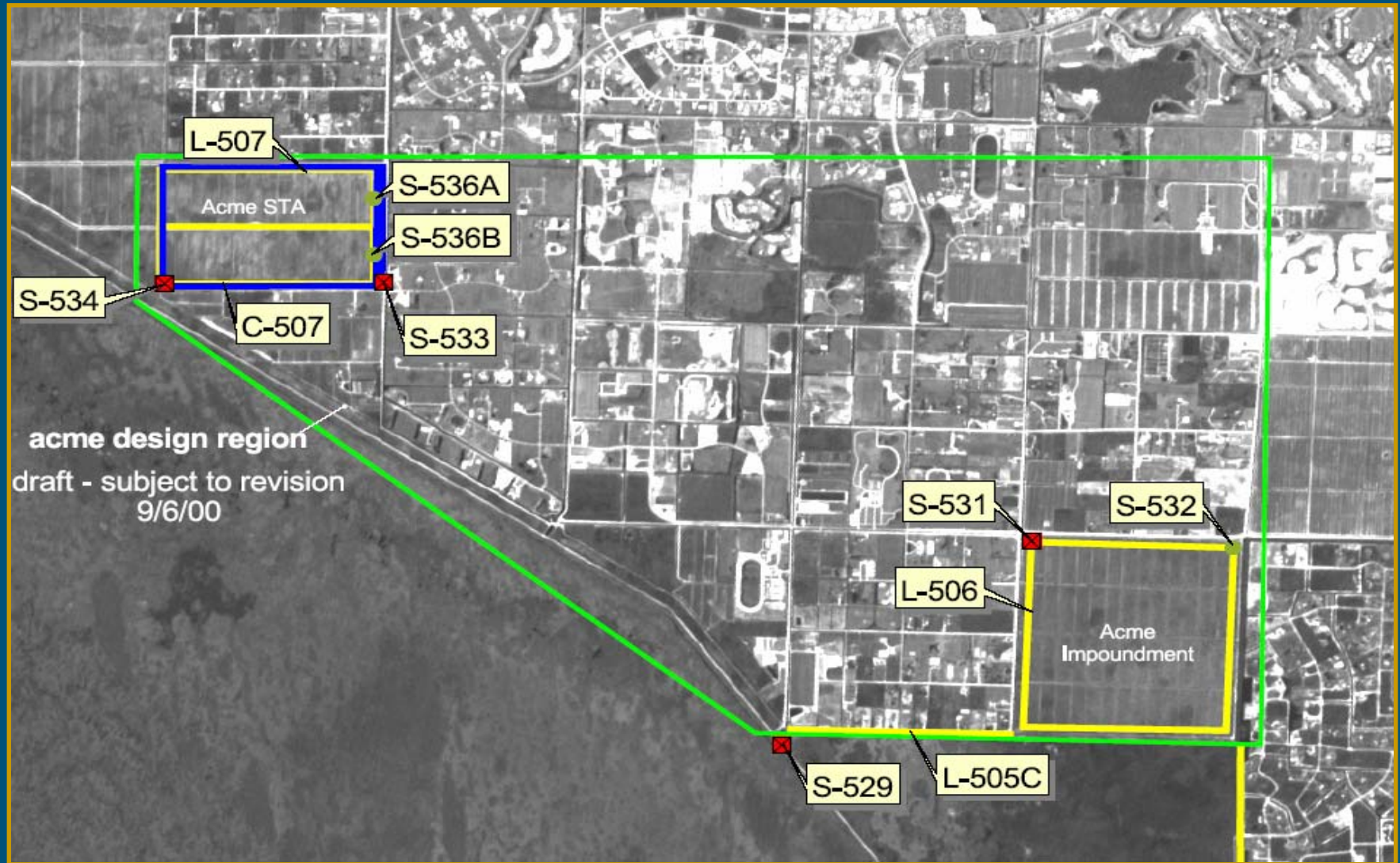


G-94D

**Water Conservation
Area 1**

Acme Basin B

Restudy Project Design



Project Objectives

- Increase spatial extent of protected natural areas
- Provide water to the Arthur R. Marshall Loxahatchee National Wildlife Refuge and Everglades National Park (natural system)
- Reduce amount of water lost to tide
- Reduce amount of water withdrawn from Lake Okeechobee

Status and Major Milestones for Current Phase

Status:

- Alternative Formulation Briefing May 05
- Draft PIR for In-House Review Jul 05
- Draft PIR for Public Review Sep 05
- 404 Permit Feb 06
- Contract Award Mar 06

Project Cost*

Project Element	Cost Estimate
Real Estate	\$ 8,500
Construction	\$11,600
Total	\$20,100

***Note: This estimate is the “base line” estimate based on Restudy, and does not account for inflation since 1999 or future price escalation**

Lake Okeechobee Watershed



May 10, 2005

Lake Okeechobee Watershed Location Map



Project Objectives

- **Store water during periods of excess rainfall**
- **Increase spatial extent of protected natural areas**
- **Reduce nutrient inflows to Lake Okeechobee**
- **Reduce amount of water lost to tide**
- **Reduce amount of water withdrawn from Lake Okeechobee**

Project Objectives

- Stores water during wet periods for use during dry periods
- Increases storage capacity to reduce the duration and frequency of high and low water levels in Lake Okeechobee, protecting littoral zones and downstream estuaries
- Reduces nutrient loading into Lake Okeechobee
- Restores hydrology of isolated wetlands
- Addresses water resource problems to balance environmental needs, water supply and flood control

Overview of Project Features and Costs

- Project Features:

The Lake Okeechobee Watershed Project is a compilation of Five Restudy components:

- (1) North of Lake Okeechobee Storage Area: a 17,500-acre reservoir with depths to 11.5 ft., and a 2,500-acre storage treatment area
- (2) Taylor Creek/Nubbin Slough Reservoir Assisted Storage Treatment Area (RASTA): a 5,000-acre reservoir with depths to 10 ft., and a 5,000-acre storage treatment area

Overview of Project Features and Costs

- **Project Features (continued):**

(3) Lake Okeechobee Water Quality Treatment

Facilities: a 1775-acre Reservoir Assisted Stormwater Treatment Area (RASTA) in the S-154 Basin; a 2600-acre RASTA in the S-65D Basin; and 3,500 acres restored isolated wetlands by plugging drainage ditches in S-65D, S-65E, S-154, and the Taylor Creek /Nubbin Slough watersheds

(4) Lake Okeechobee Tributary Sediment Dredging:

Dredging of sediments from 10 miles of primary canals within an 8-basin area in the northern watershed of Lake Okeechobee

Overview of Project Features and Costs

- **Project Features (continued):**

(5) Lake Istokpoga Regulation Schedule: Plan development to change the current operation strategy of Lake Istokpoga

Total Project Cost: \$455,878,000
(1999 Restudy estimate)

Project Status

- **Conducted Feasibility Scoping Meeting (FSM) on 16 December 2004**
- **Continuing the plan formulation process of screening to narrow the alternative array**
- **Scheduled to conduct the Alternatives Formulation Briefing (AFB) in September 2005**

ALTERNATIVE FORMULATION

Alternative Formulation Consultation

Project is undergoing alternative plan development

Includes:

Description of Restudy plan

Main plan formulation considerations

Description of Alternative plans formulated to date

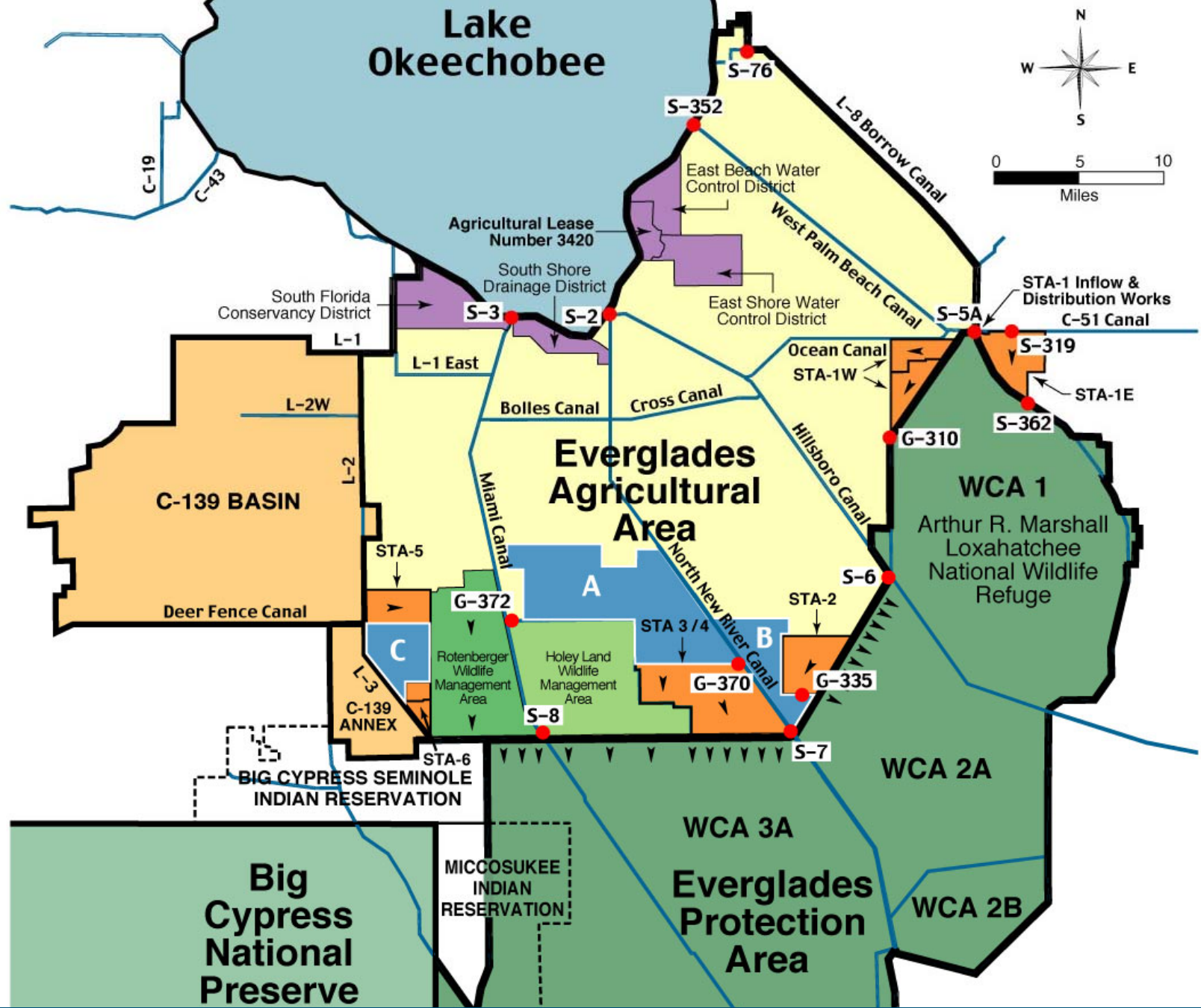
Seeking:

Input on alternative plans considered, potential new alternatives, and benefits and impacts of those plans.

Everglades Agricultural Area Storage Reservoirs



May 10, 2005



Everglades Agricultural Area Storage Reservoirs

Everglades Agricultural Area Reservoir Objectives

- **Habitat improvement of Lake Okeechobee and the estuaries by:**
 - Reducing EAA irrigation demands on Lake Okeechobee
 - Reducing back pumping to Lake Okeechobee
 - Storage of regulatory releases from Lake Okeechobee
- **Habitat improvement of the Everglades Protection Area (EPA)**
 - Timing of environmental water deliveries
 - Water quality improvements to the EPA by making STAs more efficient
 - Storage of regulatory releases from Lake Okeechobee

Restudy Plan

- **Reservoir in two Phases**
 - 360,000 ac-ft of storage with associated levees, canals, pump stations and water control structures
- **Canal Improvements**
 - Improved conveyance capacity for the Miami Canal, North New River Canal

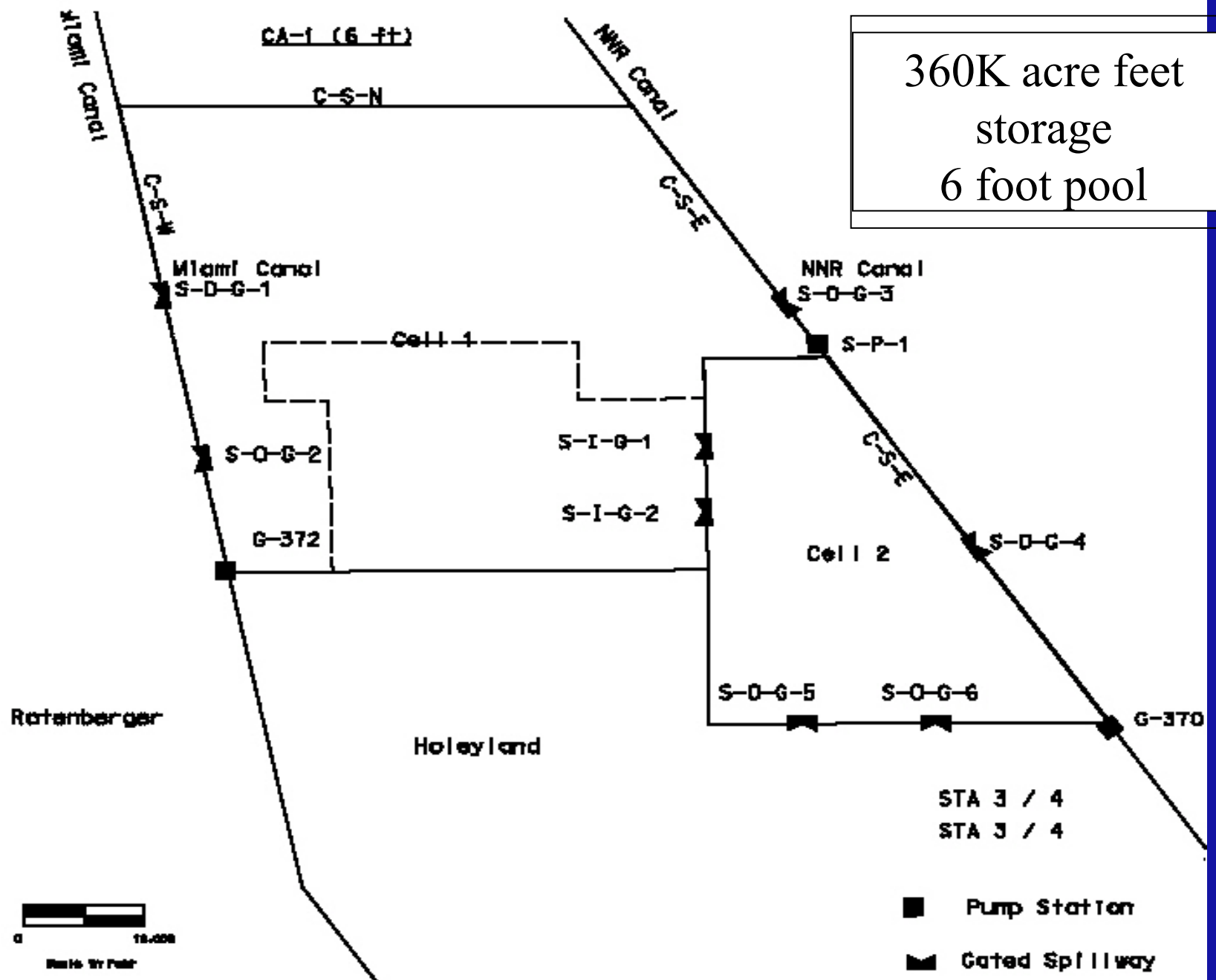
Project Cost*

Project Element	Cost Estimate
Real Estate	\$ 86,536
Construction	\$350,112
Total	\$436,648

***Note: This estimate is the “base line” estimate based on Restudy, and does not account for inflation since 1999 or future price escalation**

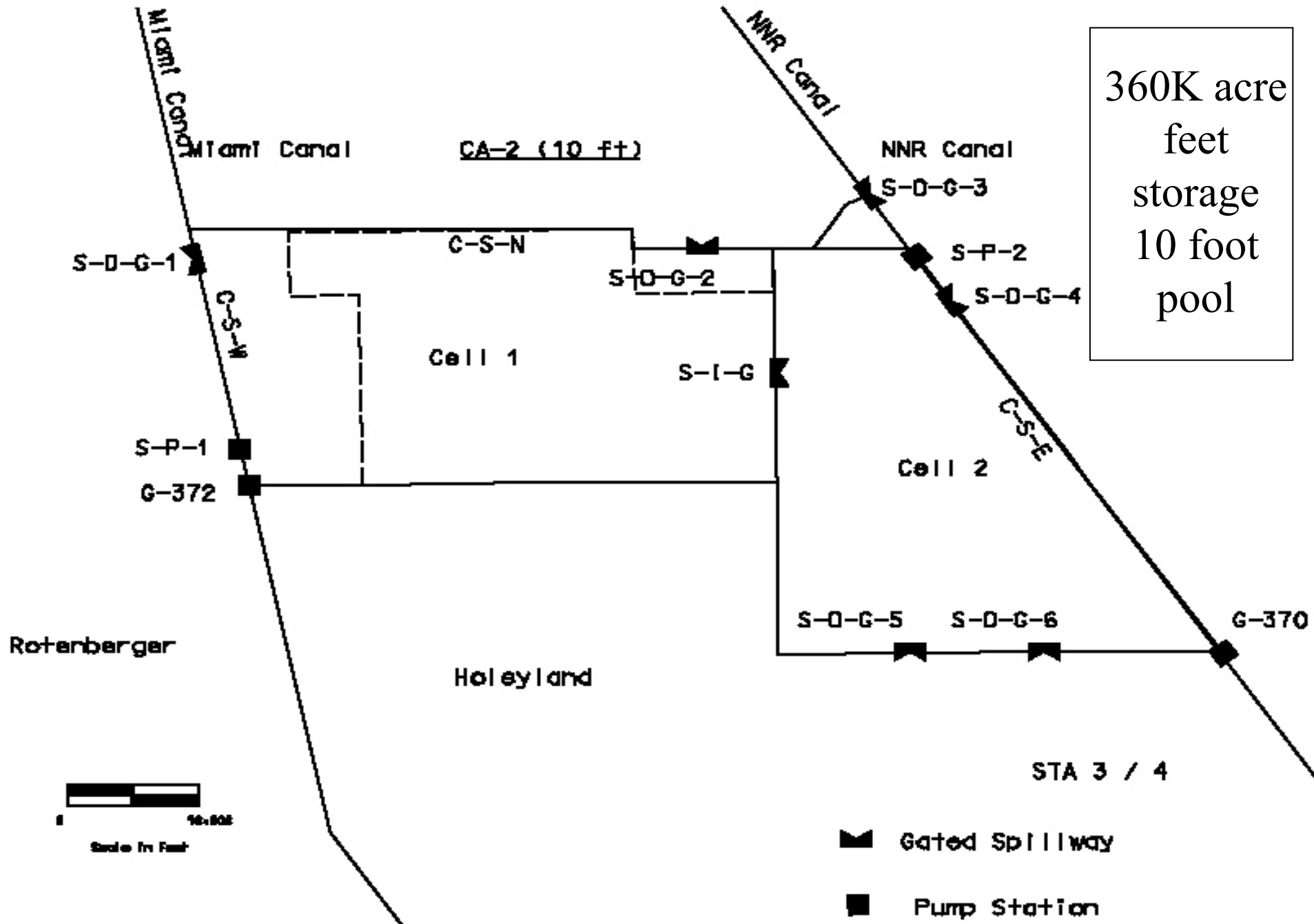
Variations in Alternatives Being Considered

- Variations in depth and footprint of Reservoir
- Combining Phase 1 and Phase 2 to achieve planned storage on existing footprint
- Type of construction
- Seepage control methods
- Variations in quantity of water stored

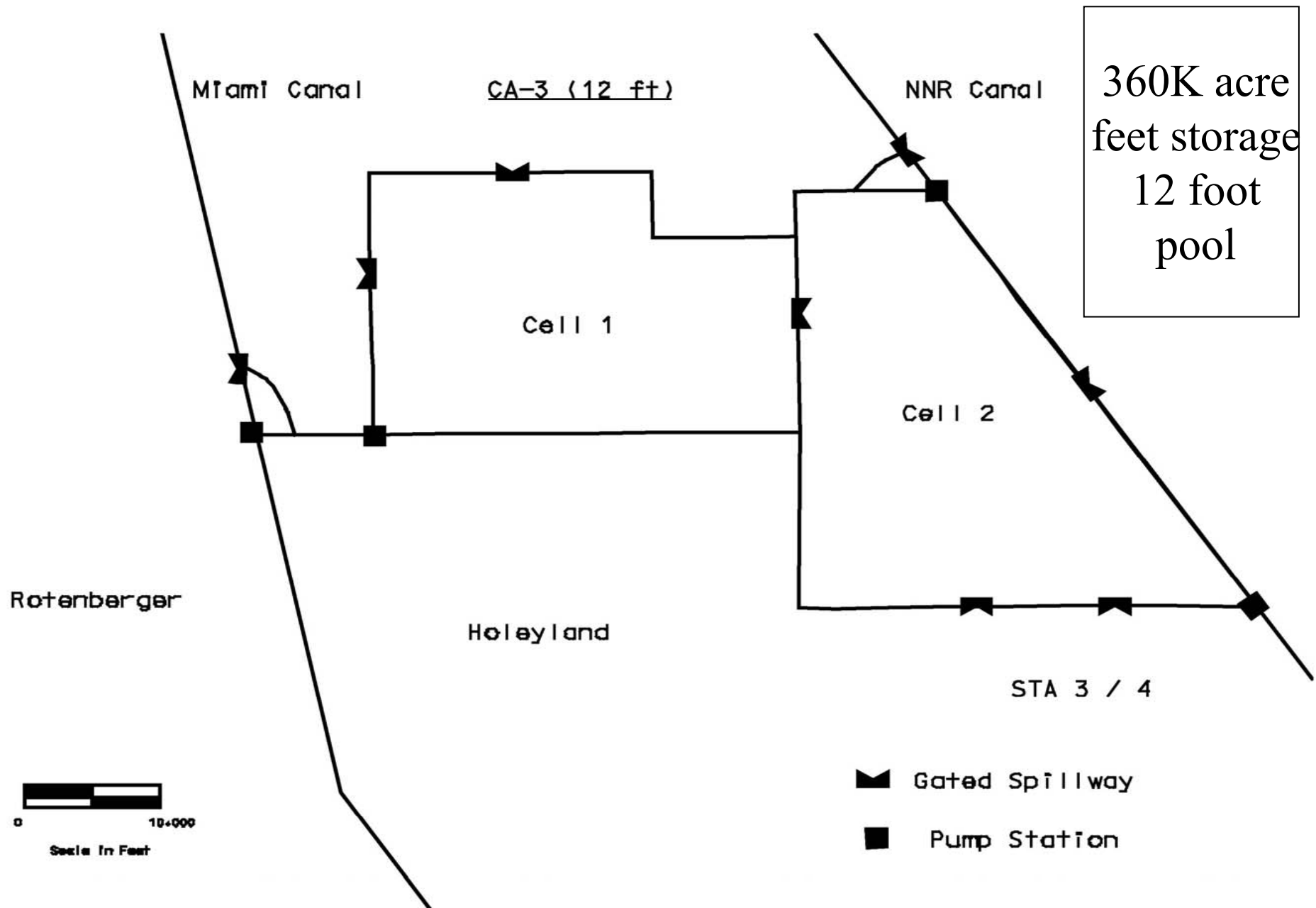


Everglades Agricultural Area Storage Reservoirs

360K acre
feet
storage
10 foot
pool

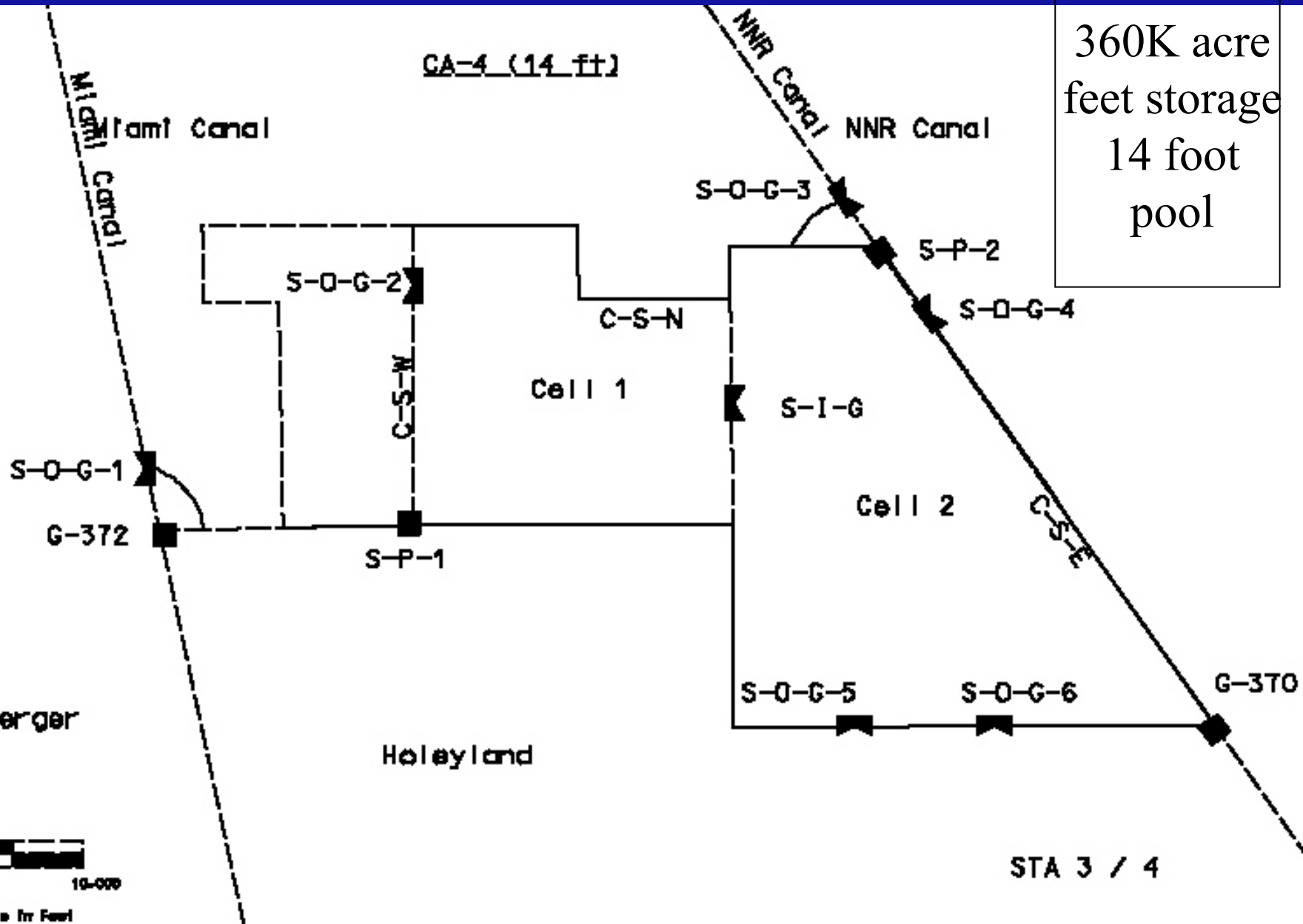


Everglades Agricultural Area Storage Reservoirs



Everglades Agricultural Area Storage Reservoirs

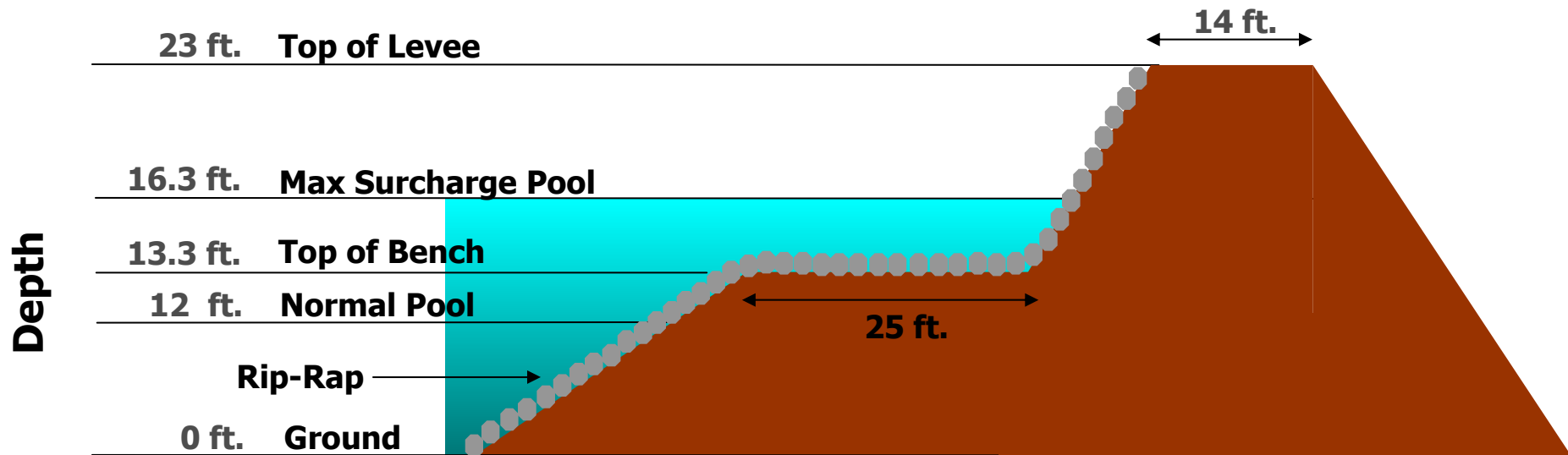
360K acre
feet storage
14 foot
pool



Everglades Agricultural Area Storage Reservoirs

Earthen Levee

(360,000 acre feet at 12 foot Design Depth)




Not to Scale

What's Changed from Restudy

- **Site Geology**
 - Actual site geology differs from assumed, requiring significant blasting of borrow material
- **Wind and Precipitation Design Criteria for Freeboard**
 - Freeboard increased from 3' to 12'
 - 25' wide wave break berm incorporated
- **Other**
 - Land costs, Talisman acquisition not included in Restudy costs

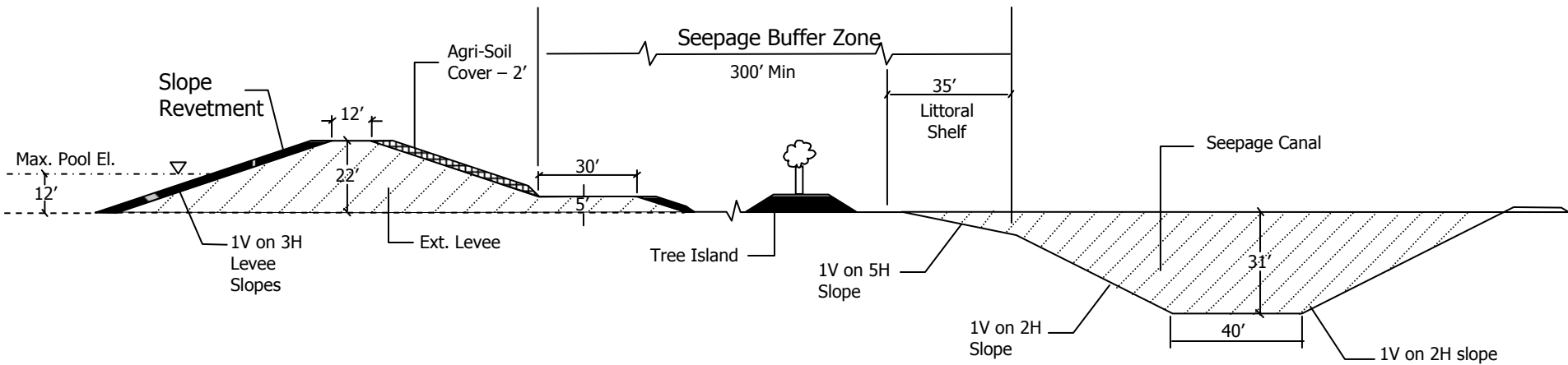
Value Engineering Considerations

- **Minimization of internal levees**
- **Reduction in structures and pump stations**
- **Reduce the size of perimeter canal**
- **Roller Compacted Concrete**

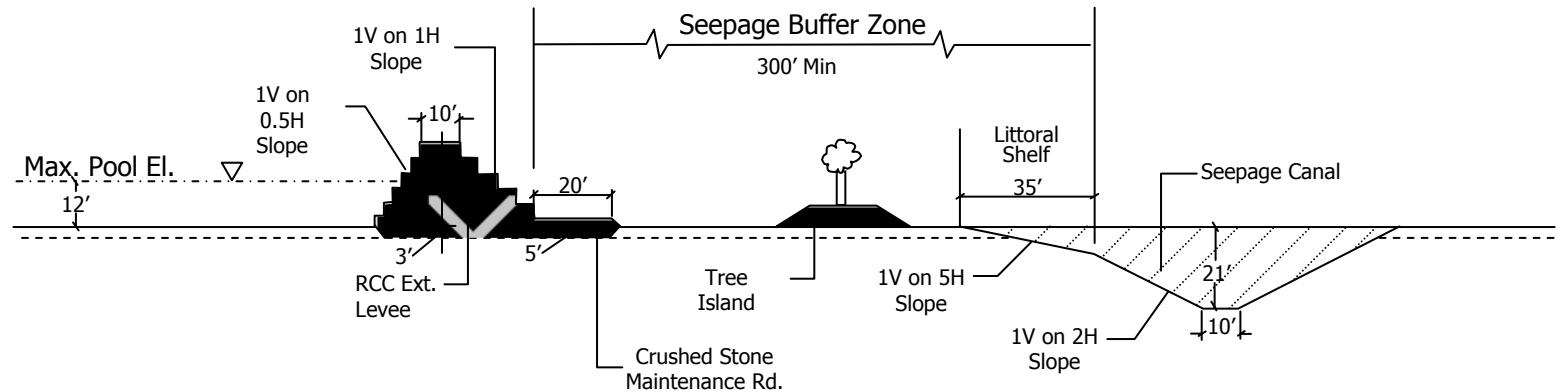


**RCC is a viable option for EAA
reservoir with possibly
significant cost savings**

Earth Embankment



RCC Embankment



Status

- **Acceler8 EAA reservoir is undergoing design-build by SFWMD**
 - Test cell testing program is currently underway and is expected to be completed in May 2005. Preliminary results suggest that additional seepage management measures may be necessary
- **Plan evaluation considered lessons learned from the test cell construction**

Major Milestones for PIR Phase

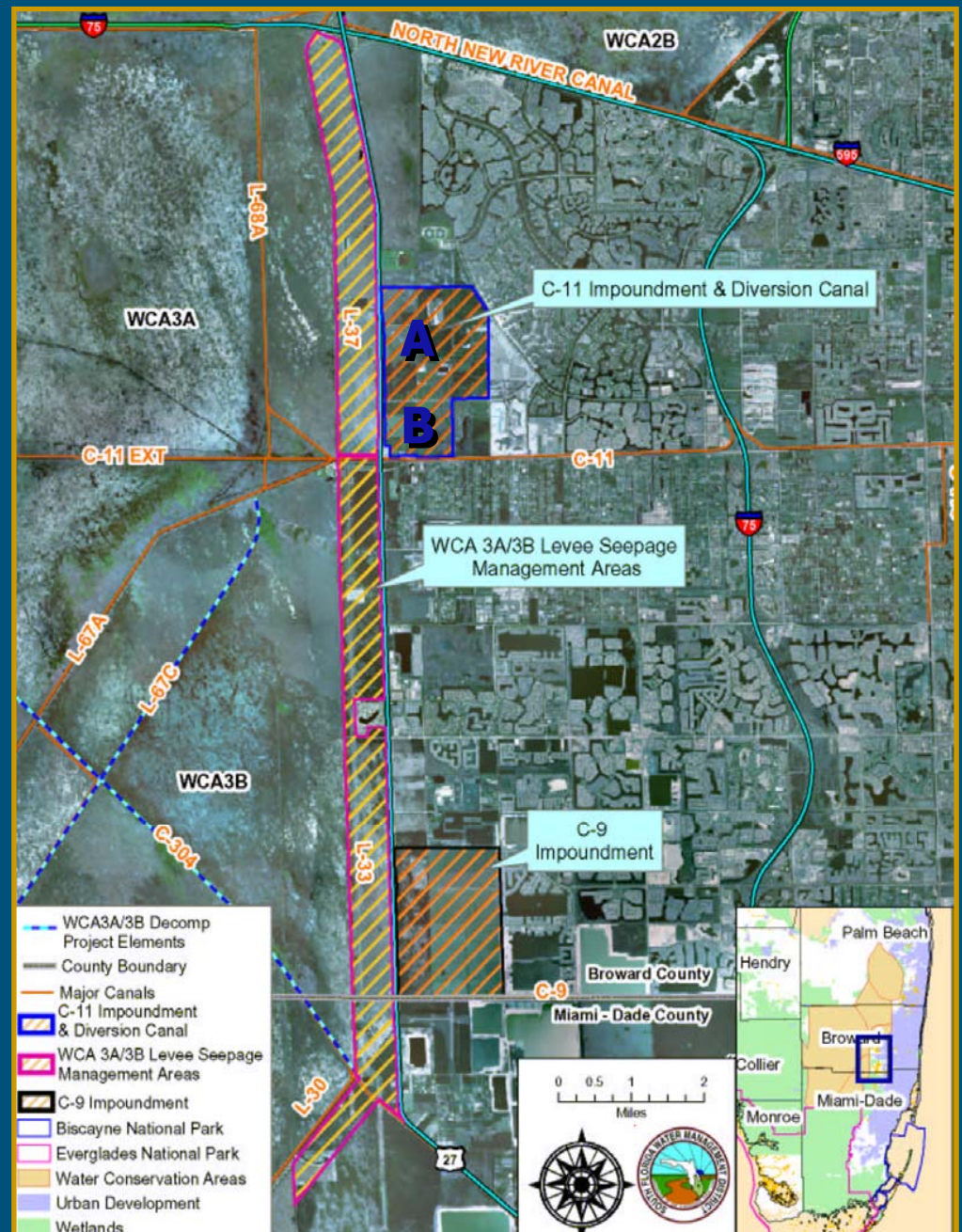
- Feasibility Scoping Meeting Aug 04
- Tentatively Selected Plan Apr 05
- Alternative Formulation Briefing May 05
- Draft PIR for Public Review Sep 05
- Final PIR Apr 06

Broward County Water Preserve Area (WPA)



May 10, 2005

Broward County WPA



Broward County Water Preserve Area (WPA)

Broward County WPA – Project Objectives

- **Retain water in the natural system (WCA 3) by reducing seepage**
- **Improve hydro-patterns in Water Conservation Area (WCA) 3**
- **Reduce loading of excess nutrients into WCA 3**
- **Restore habitat function and species diversity in WCA 3**
- **Increase spatial extent of wetland functions**

Comparison of Alternatives

- **Alternatives for Broward County WPA were optimizations of the Restudy (D-13 R Alternative)**

Restudy (D-13 R) Alternative:

- C-11: 1,600 acre impoundment at 4' deep
- C-9: 2,500 acre impoundment at 4' deep
- Seepage Management Area: levees, canals, divide structures

Comparison/Optimization of Restudy Alternative

- **Alt 2: Design attempt to solve seepage problems**
 - C-9: 2,091 ac (divided into 3 compartments)
 - a) 1,232 ac at 6' deep
 - b) 474 ac at 2' deep
 - c) 385 ac at 2' deep
 - C-11: 1,734 ac (divided into 2 compartments)
 - a) 1,119 ac at 6' deep
 - b) 615 ac at 2' deep
 - Seepage management: buffer strip, 3 structures, operations adjusted

Comparison/Optimization of Restudy Alternative

- **Alt 3: Design attempt to solve seepage problems**
 - C-9: 2,091 ac
 - a) 1,232 ac at 6' deep
 - b) 474 ac at 4' deep
 - c) 385 ac at 4' deep
 - C-11: 1,734 ac
 - a) 1,281 ac at 6' deep
 - b) 453 ac at 4' deep
 - Seepage management: buffer strip, 3 structures, operations adjusted

Comparison/Optimization of Restudy Alternative (continued)

- **Alternative 4**

- C-9 Impoundment: 1,739 acres, 4 ft deep
- C-11 Impoundment: 1,695 acres
 - Northern Compartment "A" 1,490 acres, 4 ft deep
 - Southern Compartment "B" 205 acres, 2 ft deep
- Seepage management: Buffer strip (4,312 ac), 3 structures
- * *North New River Channel Modifications from C-11 Impoundment to Seepage Management Area*

Tentatively Selected Plan (TSP)

- **Project Features:**

- C-9 Impoundment: 1,739 acres, 4 ft deep
- C-11 Impoundment: 1,695 acres
 - Northern Compartment "A" 1,490 acres, 4 ft deep
 - Southern Compartment "B" 205 acres, 2 ft deep
- Seepage management: buffer strip (4,312 ac), 3 structures
- **North New River Channel Modifications from C-11 Impoundment to Seepage Management Area*

- **Total Features Cost: \$450,373,000**

Why Alternative 4 is TSP

- **Results of Cost Effectiveness/ Incremental Cost Analysis: cost effective plan & best buy plan (efficiency) in accordance w/ Corps guidance (ER 1105-2-100)**
- **Lowest per unit cost of any alternative (for combined, normalized output)**
- **Fully meets Broward County, WPA planning objectives**
- **Strong public & resource agency support (USFWS, FDEP, EPA, Broward County)**

Project Cost by Component (Oct 2005 price levels)

C-11 Impoundment.....	\$222,033,000
C-9 Impoundment.....	\$ 87,309,000
Seepage Mgt Area.....	\$118,000,000
North New River Improvements.....	\$ 23,031,000
Total	\$450,373,000

Restudy vs. TSP

Restudy Plan **(Oct 2005 price levels)**

- Cost - \$392 mil
(C-9, C-11, Seepage Mgt Area)
\$13.8 mil North New River
Total cost: \$405.8 mil
- Features:
 - Reservoir Impoundments
(C-9, and C-11)
 - Seepage Management Area
 - North New River channel
modifications (within Broward
County WPA project limits)

TSP **(Oct 2005 price levels)**

- Cost - \$450.3 mil
(total sum of components)
- Features:
 - Reservoir Impoundments
(C-9, and C-11)
 - Seepage Management Area
 - North New River channel
modifications (within Broward
County WPA project limits);
initially authorized in
WRDA 2000

Project Status

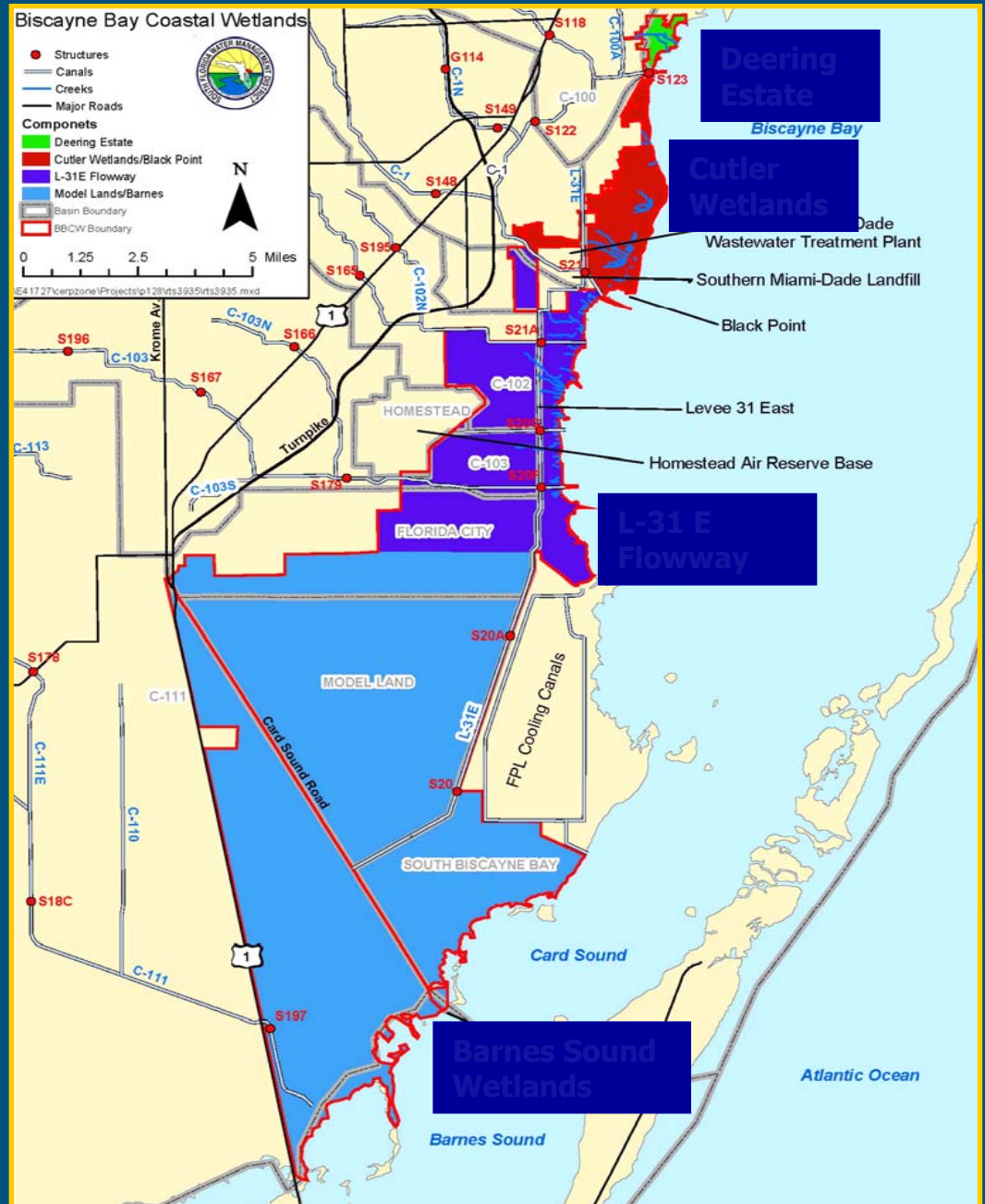
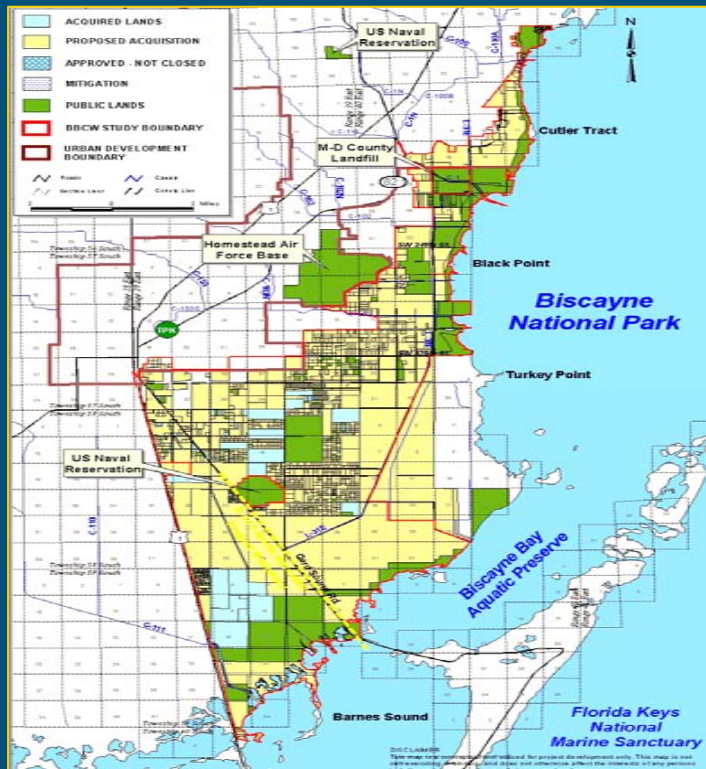
- **Draft Project Implementation Report (PIR) and Environmental Impact Statement (EIS) for Public Review: October 2005**
- **Public Review: Oct 2005-Dec-2005**
- **Final PIR: April 2006**
- **Construction under Acceler8 in summer 2006**

Biscayne Bay Coastal Wetlands PIR



May 10, 2005

Biscayne Bay Coastal Wetlands Project Area



Project Objectives

- **Reestablish productive nursery habitat along the shoreline**
- **Redistribute freshwater flow to minimize point source discharges to improve freshwater and estuarine habitat**
- **Restore and improve quantity, quality, timing and distribution of freshwater to the Bay, including BNP**
- **Preserve and restore spatial extent of natural coastal glades habitat**
- **Reestablish connectivity between Biscayne Bay Coastal Wetlands, C-111 Basin, Model Lands and adjacent basins**

Project Cost*

Project Element	Cost Estimate
Real Estate	\$205,655
Construction	\$ 93,928
Total	\$299,583

***Note: This estimate is the “base line” estimate based on Restudy, and does not account for inflation since 1999 or future price escalation**

Variations in Alternatives Being Considered

- Variations in STA and Reservoir sizing
- Placement of spreader ditches
- Movement of the levee to the west to create additional freshwater wetlands
- Pump placement and size to maximize water distribution to the Bay
- Use of reservoirs to hold water for more even distribution when necessary
- Various locations of plugs and culverts to alter the flow of water

Alternative M

- Overall intent was to approach YB benefits while minimizing construction/operation \$
- Mostly accomplished using trenches and limited detention areas for WQ treatment (these provide some needed storage)
- Large ditches in coastal canals are plugged (neither canals nor mosquito ditches are backfilled)
- Greater reliance on operational changes
- Designed for 80% of daily canal flows

Alternative J

- Uses +/- 80% of water in the basin
- Uses numerous gated weirs, culverts, pump structures, spreader canals to redistribute
- Incorporates STA's and large Reservoirs
- Mosquito ditches are plugged (will fill in over time); Military canal between L-31E and coast will be backfilled
- One historic slough is “recreated” (Sub-C2)

Alternative E

- Uses approximately 90% of the water in the basin
- Greater #/size of STA's and Reservoirs as well as weirs/pumps
- Four sloughs are re-created
- New spreader ditch/levee to be constructed in sub-component 2
- L-31E backfilled in sub-component 3; construct new storm levee and canal along western project boundary
- In sub-component 4, backfill L-31E
- Tallahassee Road is removed
- Culverts installed along Card Sound Road
- Overall stage increase in wetlands

Alternative P

- **Establishment of nearshore estuarine conditions through the redistribution of canal flows utilizing storage and treatment features and restored natural flow ways and wetlands**

Major Design Elements (Reservoirs and STAs to be sized based on a target salinity regime)

- Storage reservoirs to detain canal discharge
- Treatment wetlands (STAs) to remove nitrogen
- Restore wetlands converted to agriculture
- Enhance existing wetlands through flow adjustment
- Restore transverse glades as flow conduits
- Inter basin transfer of water to maximize redistribution
- Elimination of secondary barriers to flow

Alternative Q

- **Reduce/eliminate engineered STAs and reservoirs; use forested wetlands as polishing wetlands**
- **Plug canals instead of filling canals**
- **Construct a spreader canal throughout both projects to connect BBCW and C-111SC**
- **Alternative accommodates, but does not depend on, full-scale wastewater reuse**

Biscayne Bay Coastal Wetlands Project Status

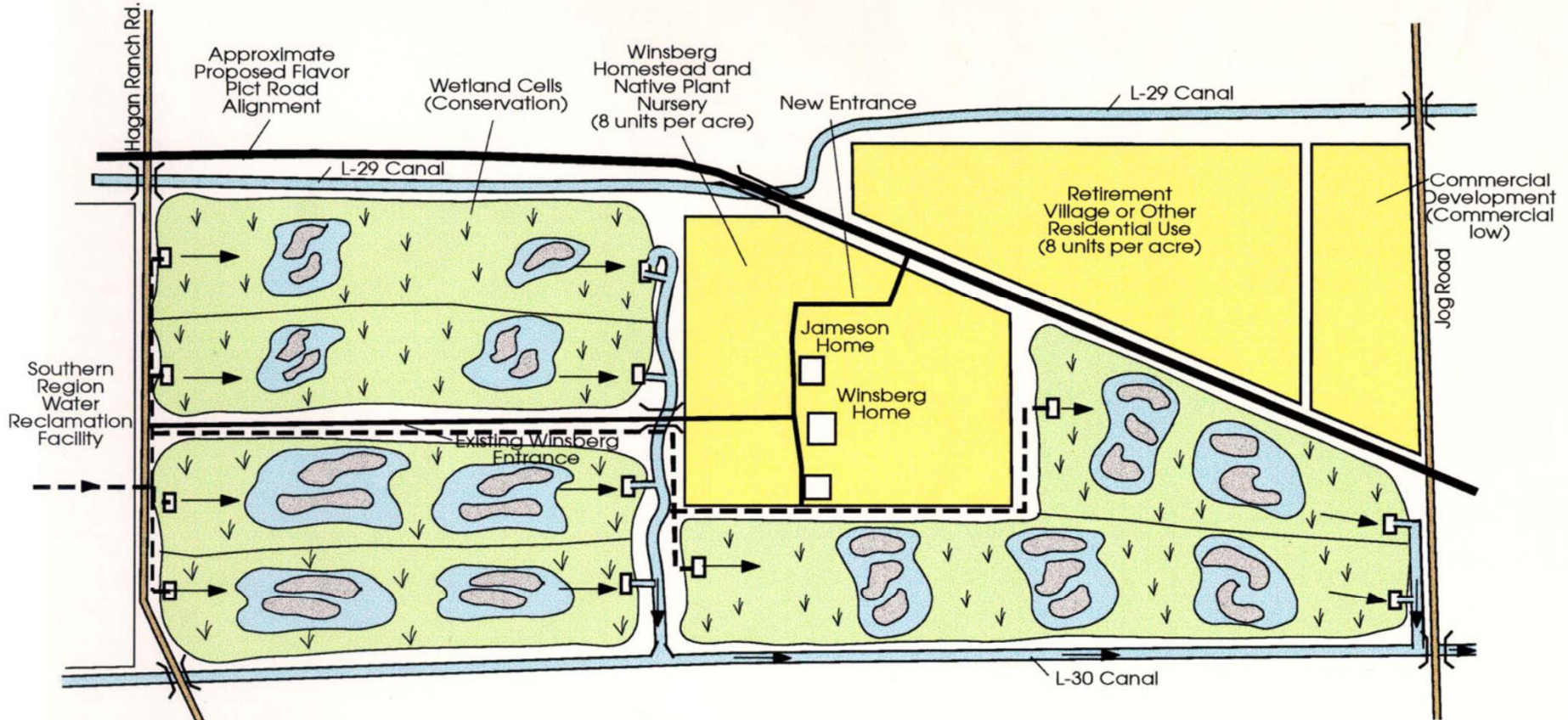
- **Tentatively Selected Plan – June 2005**
- **Draft PIR in Federal Register – May 2006**
- **Final PIR Complete – January 2007
(May 2007 per Woodley Letter)**
- **SFWMD Acceler8 Construction Start – August 2007**
- **COE's Construction Completion in Band 2
(2010 – 2015)**

Winsberg Farm Wetland Restoration



May 10, 2005

Winsberg Farms Plan



Location Map



LEGEND

- | | |
|-------------------------------------|--|
| Proposed Flavor Pict Road Alignment | Habitat Islands |
| Treated Effluent Force Main | Deep Water Wetland |
| Bridge - Canal Crossing | Marsh Wetland |
| Direction of Flow | (Conservation) - Indicates proposed land use |

Approximate Scale in Feet
0 500 1000



Project Objectives

- **Restore wetlands in Palm Beach County**
- **Reduce the amount of treated water wasted in deep injection wells**
- **Create a wetland that recharges the local aquifer**
- **Create a new, ecologically-significant wildlife habitat**
- **Extend the function of the nearby Wakodahatchee Wetland**
- **Increase local water resources for natural system and for other uses**

Winsberg Farm Wetlands Restoration –

- **Project Features:**
 - 175 acres for wetland restoration, divided into 150-acre wetland area and 25 acre information center.
 - Use treated wastewater from the Southern Region Water Reclamation Facility (SRWRF) as the water source.
 - Phase sites include a mosaic of emergent marsh, wet prairie and hardwood hammock habitats.
- **Project Cost: \$14.1 million (Restudy)**

Comparison of Alternatives

- Eight properties were evaluated
- Screened to the four properties owned by the Sponsor based on actual acquisition cost as costs are much less than cost and time required to obtain others; Winsberg Farm is Sponsor-owned
- Hazardous, toxic, radioactive waste (HTRW) data available on Sponsor-owned sites; would have to develop data at other sites; the Sponsor-owned sites adequate to evaluate benefits
- Of the four screened properties, Winsberg Farm was the only site purchased for wetland restoration

Restudy versus Updated Plan for PIR

Restudy Plan (Apr 1999 price levels)

- Cost: \$14.1 million
- Components: a 175-acre wetland to use treated water from the SFWRF, which would be normally wasted in deep injection wells, to create ecologically significant wildlife habitat, recharge local aquifer, extend the function of a nearby wetland

Updated PIR Plan (Current Price Levels)

- REAFFIRMING the RESTUDY
- Cost: \$14.6 million
- Components: 150-acre wetland with a 25-acre information center with parking; treated SFWRF waters are to flow into the wetlands, fulfilling the Restudy goals

Rationale for Reaffirmation Analysis and update to PIR Plan

- **Cost Effectiveness/Incremental Cost Analysis resulted in Winsberg Farm as the best plan**
- **Winsberg Farm is a Sponsor-owned site, purchased specifically for wetland restoration**
- **Data, such as HTRW, is readily available, with no known constraints**
- **Winsberg Farm has the closest proximity to the SRWRF facility.**
- **Meets environmental requirements with no environmental impacts on listed species**
- **The Winsberg Farm alternative has the lowest cost per habitat unit**
- **Winsberg Farm is the Sponsor-preferred alternative**
- **Winsberg Farm meets the Restudy goals and objectives**

Project Status

- **Conducted Alternatives Formulation Briefing (AFB) on 7 March 2005**
- **Submit Draft Project Implementation Report / National Environmental Policy Act (draft PIR/NEPA) document for review August 2005**

DRAFT REPORT

Draft Report Consultation

**Project is in final stages of Development,
Tentatively Selected Plan (TSP) has been
identified**

Includes:

**Description and Comparison of detailed
alternative plans**

Description of TSP

Seeking:

Input on findings to date and TSP

Site 1 Location Map



0 1.5 3 6
Miles

Legend

Urban Development
Wetlands

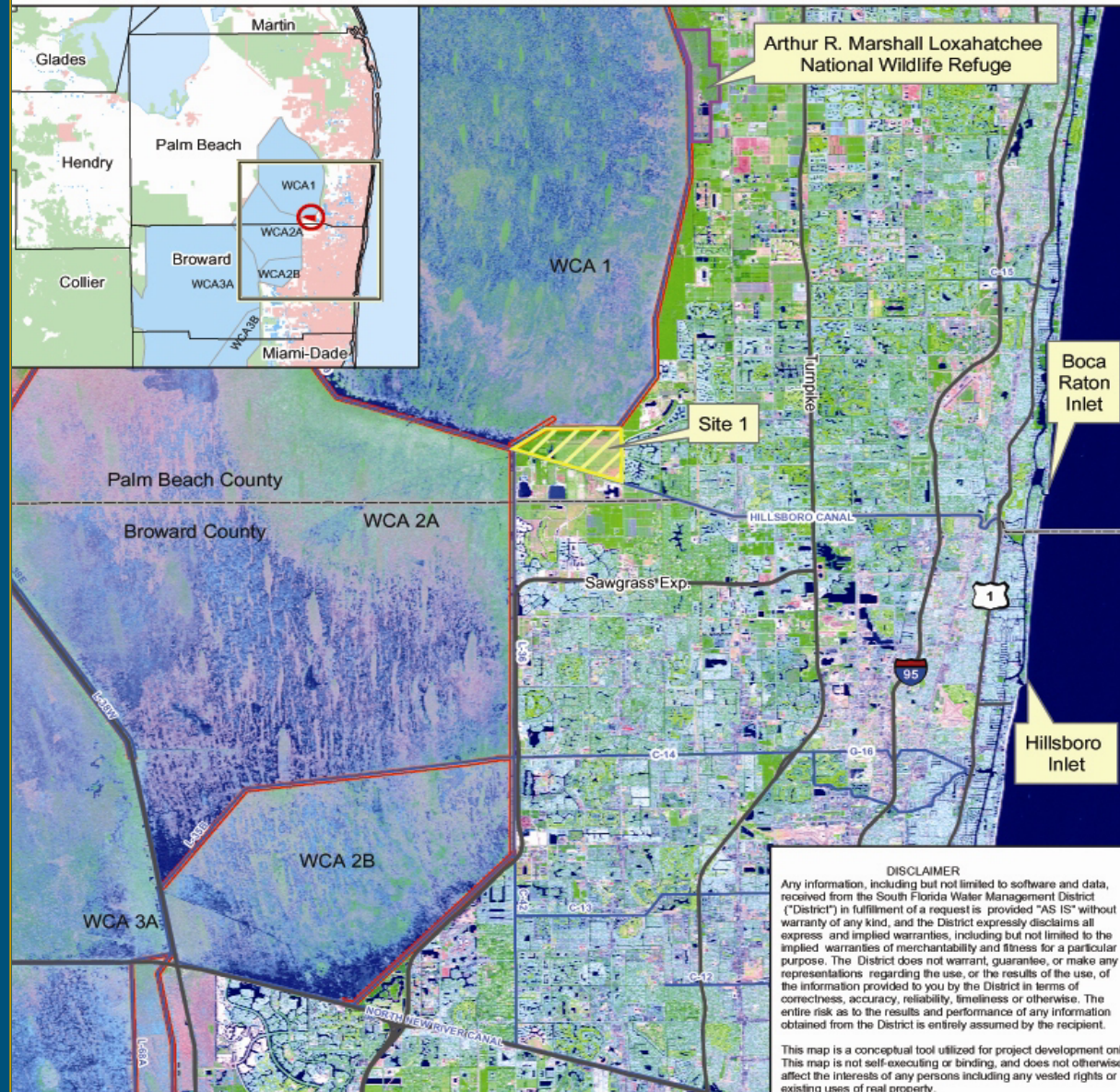


Site 1 Location
Water Conservation Areas
Arthur R. Marshall Lox. NWR



Counties
Canal
Levee
Roads

Image shown is taken from the 2000 Thematic Mapper Series



Site 1 Impoundment

Site 1 Impoundment – Project Objectives

- **Provide additional water supply during drought conditions and reduce demand on water in Loxahatchee National Wildlife Refuge**
- **Snail kite habitat will be improved and expanded**
- **Number of tree islands will increase**
- **Rate of cattail expansion will decrease**
- **Periphyton abundance and diversity will increase**
- **Estuarine health will improve**

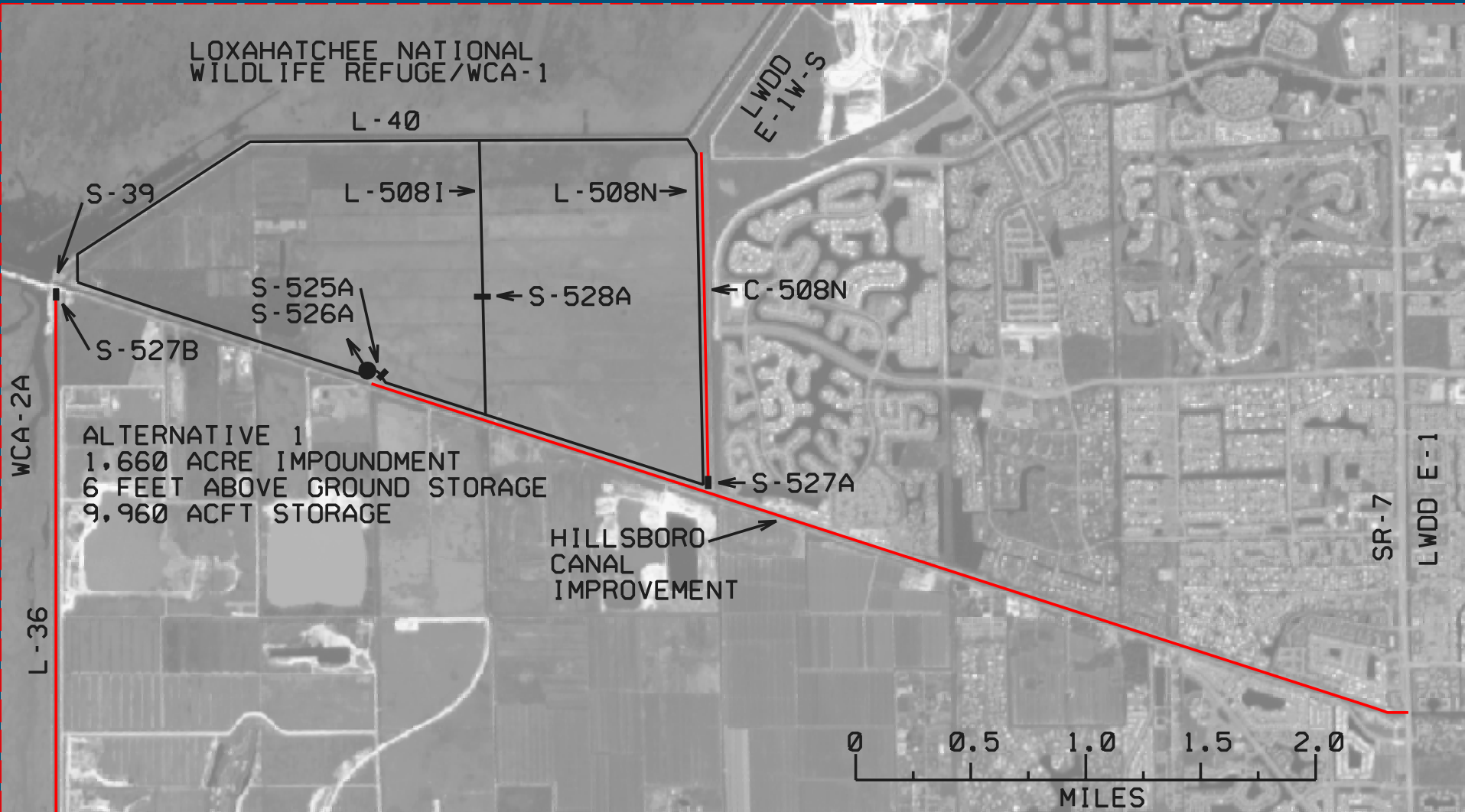
Site 1 Impoundment

Comparison of Final Alternatives

- **The Site 1 Impoundment compared 3 different alternatives through plan formulation**
- **Alternative A: No Action**
- **Alternative B: Impoundment of 1,660 acres, maximum depth of 6 ft. of water**
- **Tentatively Selected Plan, Alternative C: Impoundment of 1,660 acres at a maximum depth of 8 ft. of water**

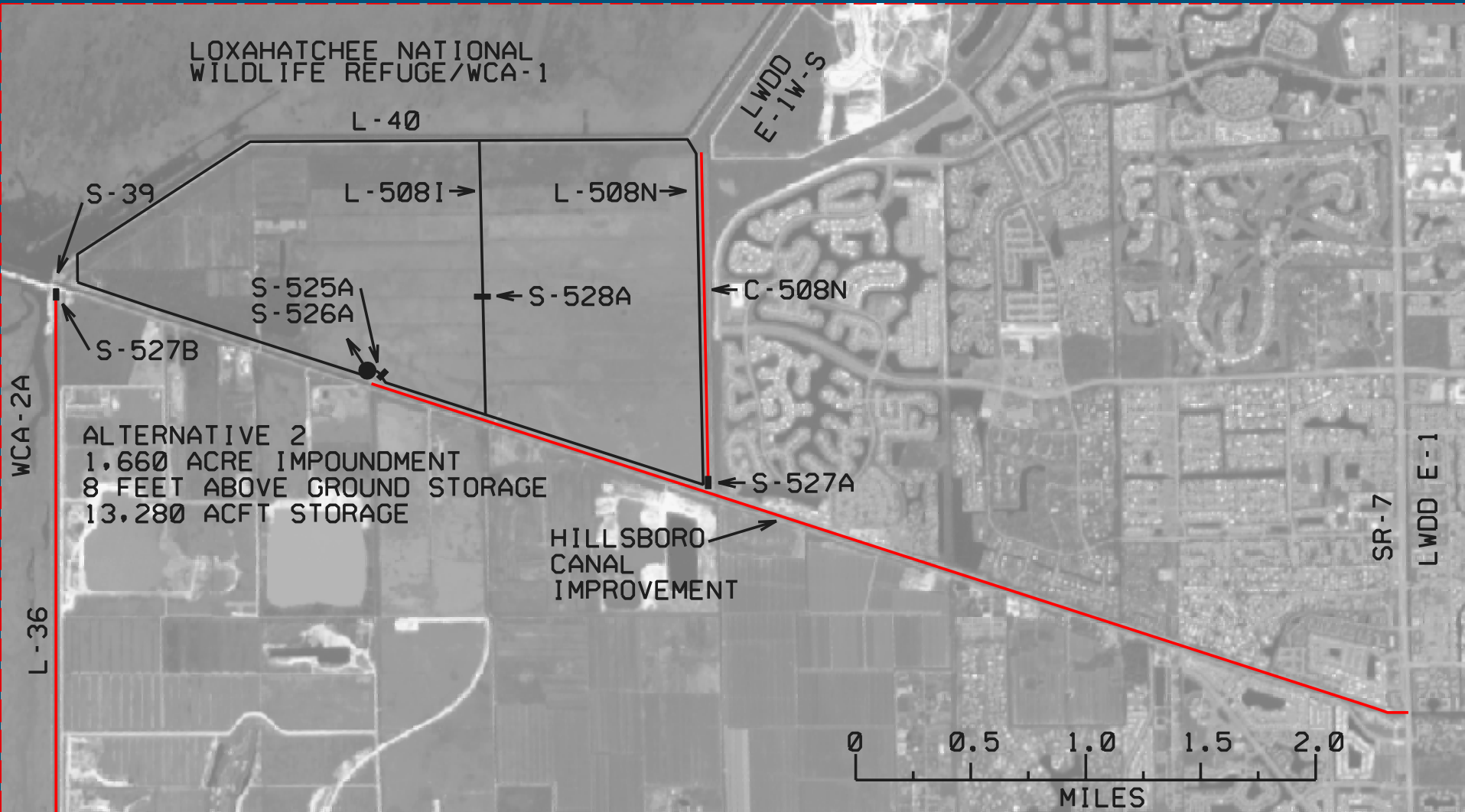
Final Array of Alternatives

Alternative B



Final Array of Alternatives

Alternative C

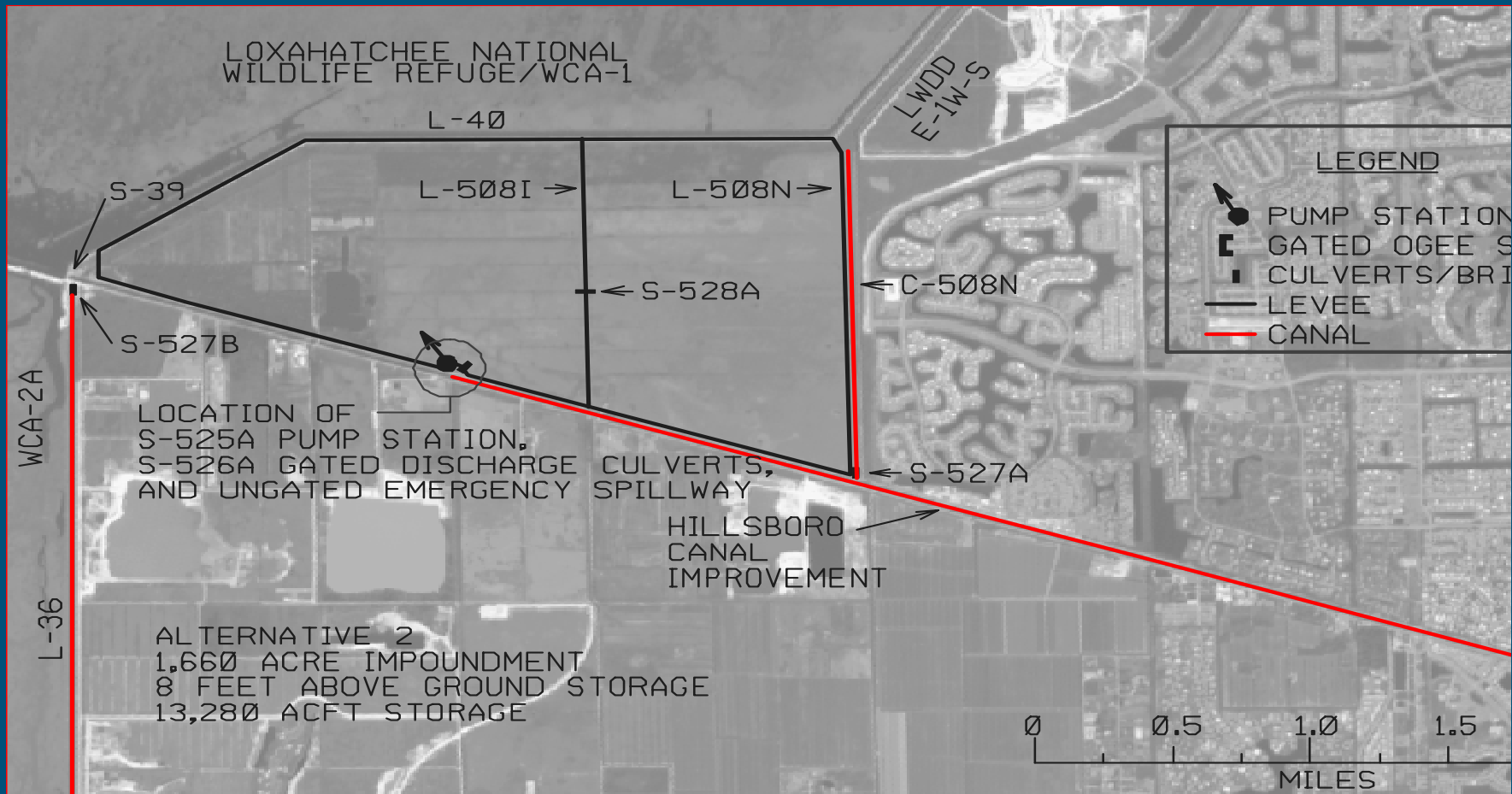


Site 1 Impoundment

Tentatively Selected Plan

- **Project Features:**
 - 1,800 acre project footprint
 - 1,660-acre interior impoundment
 - approximately 8 ft. deep
- **Project Cost: \$50,125,000**

Tentatively Selected Plan



Why Alternative C was Selected

- **Alternative C best achieves the majority of the objectives for the proposed Site 1 Impoundment**
- **Creates the most beneficial ecological effects on both the natural system and the estuarine portions of the Hillsboro Canal and Intracoastal Waterway**
- **Cost effective and is considered the “best buy” after performing an incremental cost analysis**
- **Provides for the most cost efficient plan that would be effective in meeting the goals and objectives for the proposed project**

Restudy vs. PIR (Costs)

Restudy Plan (Oct 2004 price levels)

- **Cost - \$50,148,000**
- **Components:**
 - Reservoir Impoundment
(2,460 acres at 6 feet deep)

TSP (Oct 2004 price levels)

- **Cost - \$50,125,000**
- **Components:**
 - Reservoir Impoundment
(1,660 acres at 8 feet deep)

Restudy vs. PIR

- **Restudy Conceptual Plan (1999):**
2,460 ac at 6' deep
- **Draft WPA Feasibility Study (2001):**
modified impoundment footprint to
exclude seepage canals, levees and
mining pits – 2,246 ac at 6' deep
- **Site 1 Impoundment PIR (2005):**
selected alternative plan – 1,660 ac
at 8' deep (reduction of 196 ac-ft storage)

Project Status

- **Draft Project Implementation Report plus Environmental Assessment (EA) (PIR) for Public Review: February 2005**
- **Public Review: Feb 2005 - April 2005**
- **Will continue to take comments from Task Force for next 2 weeks**
- **Final PIR: August 2005**
- **Pre-construction Engineering and Design Activities have commenced on the Site 1 Impoundment features have commenced in accordance with the Acceler8 program**
- **Construction scheduled to begin on the Site 1 Impoundment in the Summer of 2006**

Questions?

